EXPLORATION OF THE FACTORS RELATED TO TREATMENT SEEKING DELAY AMONG ADULTS DIAGNOSED WITH ACUTE MYOCARDIAL INFARCTION

Reg. No. 301410453

A DISSERTATION SUBMITTED TO
THE TAMIL NADU Dr. M. G. R. MEDICAL UNIVERSITY
CHENNAI, IN PARTIAL FULFILLMENT OF
REQUIREMENT FOR THE DEGREE OF
MASTER OF SCIENCE IN NURSING

APRIL 2016

CERTIFICATE

This is to certify that the Dissertation entitled **"A STUDY TO EXPLORE THE FACTORS RELATED TO TREATMENT SEEKING DELAY AMONG ADULTS DIAGNOSED WITH ACUTE MYOCARDIAL INFARCTION AT KMCH, COIMBATORE"** is submitted to the faculty of nursing, **THE TAMILNADU Dr. M. G. R. MEDICAL UNIVERSITY, CHENNAI** by **Reg. No. 301410453** in partial fulfillment of requirement for the degree of Master of Science in Nursing. It is the bonafide work done by him and the conclusions are his own. It is further certified that this dissertation or any part thereof has not formed the basis for award of any degree, diploma or similar titles.

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APPROVED BY DISSERTATION COMMITTEE ON AUGUST 2015

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SL. NO	ACRONYMS	ABBREVATION
1.	Acute Coronary Syndrome	ACS
2.	Acute Myocardial Infarction	AMI
3.	Coronary Artery Disease	CAD
4.	Cardio Vascular Disease	CVD
5.	ST Elevation Myocardial Infarction	STEMI
6.	Hypertension	HTN
7.	Diabetes Mellitus	DM
8.	Emergency Room	ER
9.	Percutaneous Coronary Intervention	PCI
10.	Kovai Medical Center and Hospital	KMCH

CHAPTER - I

INTRODUCTION

Cardio Vascular Disease is a significant health problem that can be prevented. The major cause of mortality worldwide is cardiovascular disease, including coronary heart disease and majority of deaths occur in low and middle-income countries like India and China. (WHO, 2011)

In the past four decades cardiovascular disease prevalence in India has risen four-fold. Cardiovascular disease already causing 29% of all deaths in the country. "Indians are falling pray for heart diseases in their productive years in life". According to the WHO, cost of lost productivity due to premature deaths and disability in India by 2015 would amount to 237 billion dollars. (Prabhakaran et al., 2009).

Non-modifiable risk factors for CAD are age, gender, ethnicity, family history and genetic predisposition of heart disease. The modifiable risk factors are elevated serum lipids, physical inability, HTN, tobacco use, diabetes, obesity, metabolic syndrome, psychological state and homocysteine levels. (Lewis et al, 2000)

The series of myocardial infarction begins with the formation of plague in the coronary arteries. When this gets ruptured clot formation begins which leads to partial occlusion of artery. Again if the plague ruptures and the thrombus becomes larger occluding total blood flow further in the coronary artery causing vasospasm, decreased oxygen supply to the affected cardiac muscles leading to ischemia and necrosis of the myocardium supplied by the artery. (Smelter et al, 2011)

Clinical manifestations of acute myocardial infarction are chest pain (may or may not), pain radiating to the shoulder, indigestion, anxiety, confusion, restlessness, pulmonary crackles, air hunger, pulmonary edema, orthopnea, frothy sputum, tachycardia with or without ectopy, tachypnea, bradycardia, diminished heart sounds especially S_1, systolic murmur, decreased cardiac output. (Urden et al, 2014)

AHA Emergency Cardiovascular Care (ECC) Guidelines reported that, an AMI diagnosis is confirmed by classic Electrocardiogram changes and/or elevated cardiac bio-markers such as troponin T and creatine-kinase-MB (CK-MB). The type of intervention is based upon the patient's physical manifestations, as well as the extent and features of the AMI. All medical interventions carried out are to restore perfusion and reduce damage to heart tissues.

AMI symptoms are usually individualized to patients. As soon as the diagnosis is confirmed as AMI, timely medical interventions such as thrombolytic and reperfusion therapy is required to restore the blood supply to coronary arteries (AHA, 2010).

Advancements in reperfusion therapy with angioplasty and thrombolysis have revolutionized the management of acute myocardial infarction (MI). Mortality rate from AMI has reduced significantly by use of these therapies. Unfortunately many patients do not reach the hospital in time they don't get benefits from them. Studies showed that only 1 in 5 patients get to the hospital within 1 hour of the onset of acute MI symptoms, this is the time frame in which they would obtain the greatest benefit from reperfusion. Death and disability among patients can be reduced, if educated them to call emergency services available at their locality as early as possible. (American Heart Association, Circulation. 2001)

NEED FOR THE STUDY

According to WHO 2015, CVD causes higher number of deaths worldwide. Statistics had shown that 17.5 million people died from CVDs in 2012, representing 31% of all deaths worldwide, from that 7.4 million died due to coronary artery disease.

Pre-hospital delay is time of onset of symptom to arrival at ER. Use of reperfusion strategies and their efficacy are inversely proportional with the time between the onset of symptoms of acute coronary disease and patients' arrival at the hospital. Delay in seeking medical care is more common even after its importance known to all. Delaying seeking treatment has been root to misunderstanding of the seriousness of the signs and symptoms, psychological denial and concerns about the implications of hospitalization causing death. (David Faxon et al., 2001)

The correct treatment for ACS should start as soon as possible after onset of the symptoms to decrease the associated morbidity and mortality. Every 30 minutes of delay leads to increase at 7.5% of relative risk for 1-year mortality. Median times range from 1.5to 6.0 hours form onset of symptoms to arrival at ER. Major obstacle in getting timely treatment is related to the patient's inability to take decision and reluctance to seek treatment. (Kathleen Dracup, 2009).

Survival rates are improved by up to 50% and 23% if reperfusion is achieved within 1 hour and 3 hours of symptom onset respectively. In one trial, delay in treatment by 30 minutes showed decrease in average life expectancy by 1 year. They conducted a study on 565 patients who underwent angioplasty for AMI, showed those who received the first balloon inflation within 60 minutes of arrival at the hospital had a 30-day mortality rate of 1.0%, but increased 1.6 times for every 15 minutes longer than 1 hour. (Moser et al., 2006)

Many persons with symptoms of AMI do not seek professional medical treatment in a timely manner. This delay is called Treatment Seeking Delay, that contributes to the disability and death associated with AMI. Individuals who delay seeking treatment are more likely to die on the way to the hospital or in the Emergency Department. (AHA, 2009).

Appropriate medical interventions should commence within one hour i.e., "golden hour", from the onset of symptoms for maximum reperfusion to occur and to minimize damage to the myocardial tissue. (AHA, 2012)

Thus pre-hospital delay remains problematic and mostly associated with the risk of disability and death and lack of research to find out the factors contributing in Treatment Seeking Delay in Indian scenario, it is the focus of this research to explore the factors.

STATEMENT OF THE PROBLEM:

A study to explore the factors related to treatment seeking delay among adults diagnosed with acute myocardial infarction at KMCH, Coimbatore.

OBJECTIVES OF THE STUDY:

The Objectives were to:

- assess the extent of delay for seeking treatment.
- explore the factors contributing to treatment seeking delay.
- compare factors contributing to treatment seeking delay among patients who had timely treatment and those who had delayed treatment.

OPERATIONAL DEFINITIONS:

Treatment Seeking Delay:

Treatment Seeking Delay is defined as the time interval from the onset of symptom to the arrival at the hospital, which is more than 120 minutes.

Factors: Factors refers to demographic, clinical, cognitive, social support factors.

- Demographic factors such as age, gender, marital status, education, type of family, occupation, monthly income.
- Clinical factors such as history of AMI, presenting symptoms (typical and atypical-not accompanied by chest pain) of AMI, self-reported pain level on arrival, history of co-morbid illness.
- Cognitive factors such as knowledge regarding AMI, symptom perception and perceived level of seriousness, measured by researcher prepared questionnaire
- Social factors include both family and non-family support, assessed by DUKE SOCIAL SUPPORT Scale.

ASSUMPTIONS:

- Subjects seeking late treatment are prone to get more complications.
- There are multifactorial causes for delay in seeking treatment.

CONCEPTUAL FRAMEWORK:

Theoretical model for this study was derived from Kaoru Ishikawa's the great Japanese quality Guru (1990), the cause and effect analysis. He was the minister at the embassy of Japan in Paris. It is an exercise to list all possible causes and their effects. Moreover, how they are linked with a particular problem or situation. It aims at discovering possible or probable causal factors and their outcomes and lead to creation of cause and effect diagram. It is the tool for cataloging and sorting the problem's causes.

These analysis enhance to think through causes of a problem thoroughly. The major benefit is that it helps to consider all possible causes of the problem, rather than just the ones that are most evident.

Cause and Effect Diagrams are also known as fish bone diagrams, because a completed diagram may look like a fish's skeleton. Depending upon the complexity and importance of the problem, it helps to investigate the most likely causes further.

The modified Kaoru Ishikawa's model in this study explains demographic factors such as age, gender, education, type of family, occupation, monthly income. & clinical factors such as history of AMI, presenting symptoms of AMI, self-reported pain level, history of co-morbid illness & cognitive factors such as knowledge regarding AMI, symptom perception and perceived level of seriousness& social factors including both family and non-family support as cause. Whereas the factors affecting treatment seeking behavior as effect.

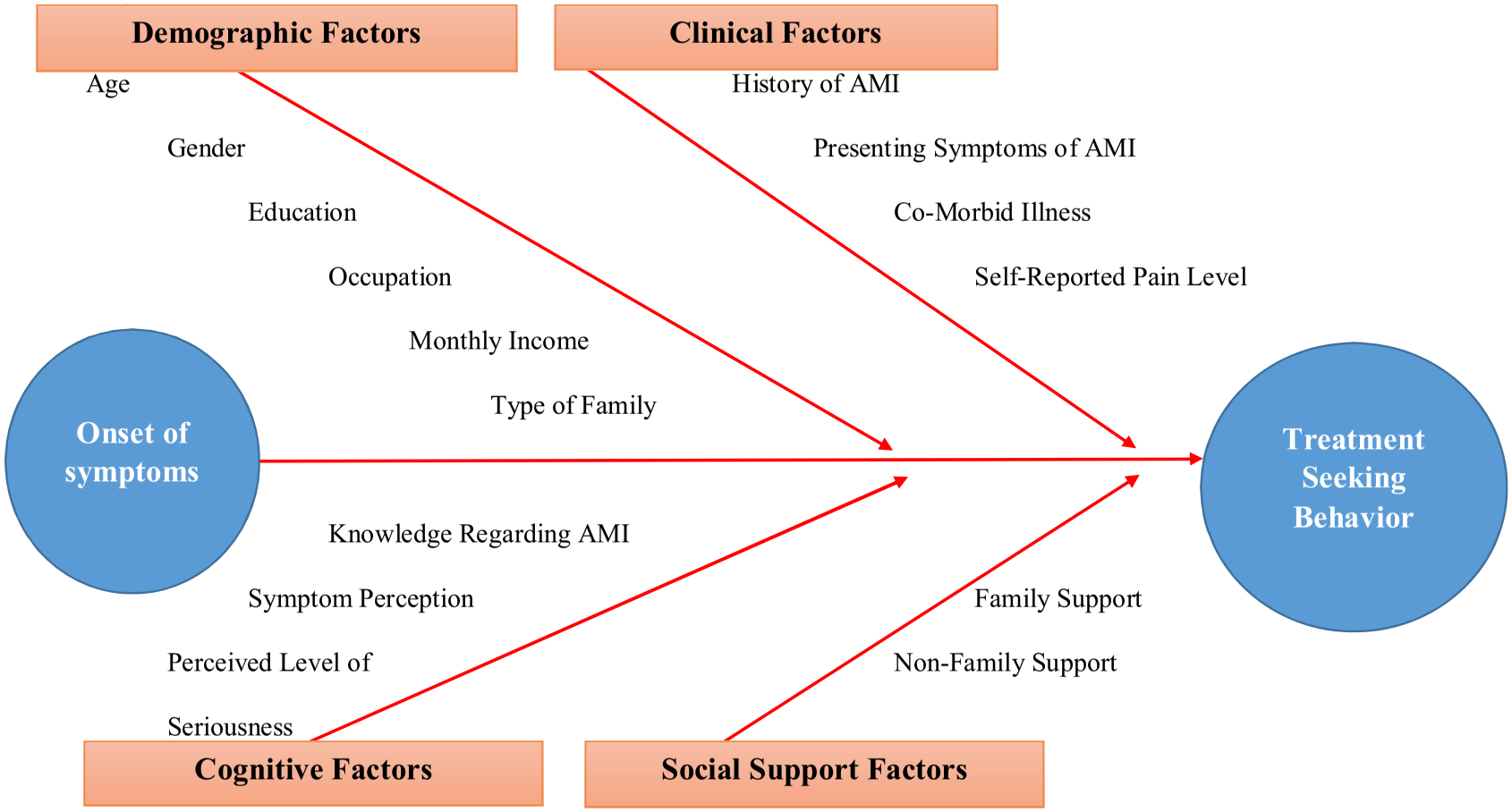

Figure 1:- Fish Bone Diagram – Modified Kaoru Ishikawa's cause and effect analysis (1990)

CHAPTER-II

REVIEW OF LITERATURE

This chapter deals with the information about present study through published material, books, for foundation to carry out the research work.

The related literatures categorized as follows.

Section A: Literature related to Prevalence of Acute Myocardial Infarction.

Section B: Literatures related to risk factors of Acute Myocardial Infarction.

Section C: Literatures related to factors causing delay in seeking treatment among patients with Acute Myocardial Infarction.

Section D: Literatures related to treatment modalities among patients with Acute Myocardial Infarction.

Section A: Literature related to Prevalence of Acute Myocardial Infarction

WHO, (2016) statistics says that there are 32.4 million myocardial infarction and strokes per year worldwide. Patients with history of myocardial infarction has an increased risk of future coronary events and have an annual death rate of 5%, six times than people without CAD in same age group.

Schiller et al., (2012) estimated that the prevalence of cardiovascular diseases from the National Health Interview Survey (NHIS) and National Center for Health Statistics (NCHS) for people ≥18 years of age in 2010. It is estimated that among Whites, 11.7% had heart disease, 6.4% had coronary heart disease, and 23.6% had hypertension. Among Blacks or African Americans 10.9% had heart disease, 6.3% had coronary heart disease, 33.8% had hypertension. Hispanics or Latinos have 8.1% heart disease, 5.2% coronary heart disease, 22.5% hypertension whereas Asians had heart disease of 7.2 %, coronary heart disease 4.9%, hypertension 20.5% and American-Indians had 12.5% heart disease, 5.9% coronary heart disease, 30.0% had hypertension. In Native Hawaiians or other Pacific Islanders, 20.2% of the population had heart disease, 19.7% had coronary heart disease, and 40.8% had hypertension.

Ahmad & Bhopal, (2005) did a systematic review on rising of coronary heart disease in India. The aim of this study was to investigate whether coronary heart disease (CHD) is rising in India and assess the quality of the evidence. 31 studies were reviewed. Prevalence range was higher in urban than rural areas in men (35-90/1000 Vs 17 - 45/1000) and women (28 - 93/1000 Vs 13 - 43/1000). They concluded that CHD is more common in urban than rural areas of India.

Section B: Literatures related to risk factors of Acute Myocardial Infarction.

Zodpey, et al., (2015) conducted a case-control study on Risk Factors for Acute Myocardial Infarction in Central India. They studied the association of socio-demographic and life-style factors with acute myocardial infarction in central India. This study included 265 cases of AMI and 265 controls. Multiple risk factors like waist hip ratio, body mass index, stress at home in last 1 year, HTN, family history of CAD, past history of gingival sepsis, tobacco smoking, raised total serum cholesterol, Chlamydia pneumoniae, Helicobacter pylori and raised C-reactive protein where found at $\alpha = 0.05$.

Saleh, et al., (2013) conducted a study on Risk Factors in Patients with Acute ST Elevation Myocardial Infarction at Karachi, Pakistan. They determined the frequency of risk factors in patients with acute STEMI. This descriptive analytical study comprised of 100 patients with acute STEMI, who are selected for thrombolysis. Out of 100, 19 were females and 81 were males. Mean age 53 years. 45% hypertensive, 41% smoker, 35% diabetic 33%, dyslipidemic and 14% have positive family history of IHD. In this study diabetes, hypertension, dyslipidemia and smoking were found to be the major risk factors in patient with Acute Myocardial Infarction.

Ismail, et al., (2004) conducted a case-control study on Risk factors for non-fatal myocardial infarction in young South Asian adults. They assessed risk factors for premature myocardial infarction among young South Asians. Risk factor assessment was done in 193 subjects aged 18–45 years with AMI for the first time. Current smoking (odds ratio (OR) 3.82, 95% confidence interval (CI) 1.47 to 9.94), use of ghee (hydrogenated vegetable oil) in cooking (OR 3.91, 95% CI 1.52 to 10.03), raised fasting blood glucose (OR 3.32, 95% CI 1.21 to 8.62), raised serum cholesterol (OR 1.67, 95% CI 1.14 to 2.45 for each 1.0 mmol/l increase), low income (OR 5.05, 95% CI 1.71 to

14.96), paternal history of cardiovascular disease (OR 4.84, 95% CI 1.42 to 16.53), and parental consanguinity (OR 3.80, 95% CI 1.13 to 1.75) were all independent risk factors for acute myocardial infarction in young adults. Formal education versus no education had an independently protective effect on acute myocardial infarction (OR 0.04, 95% CI 0.01 to 0.35). Study hence proved that use of tobacco, intake of ghee, elevated fasting glucose, increased cholesterol, paternal history of cardiovascular disease, low income, and lower level of education were associated with premature acute myocardial infarction in South Asians.

Section C: Literatures related to factors causing delay in seeking treatment among patients with Acute Myocardial Infarction Myocardial Infarction.

Jackson et al., (2014) conducted a study on symptoms of heart attack and decision making, among older rural women. In this qualitative study, snowball sampling was used. 33 women of age more than 65 years were participated. Interviews carried out with use of vignettes. The study showed that women had difficulty in identifying heart attack symptoms when they did not have previous exposure. Individuals incorrectly identified symptoms of a heart attack by associating symptoms with sleep problems, stroke, arthritis, stiffness in the neck, influenza, nerve damage, osteoporosis, bone cancer, tooth infection, and a pulled muscle. Misdiagnosis of symptoms most often led to a delay in seeking treatment in these women. The women also had a reluctance to access care due to concerns about maintaining their privacy, belief that the ambulance would be late, and they do not want to disturb their relatives.

Vidotto, et al., (2013) conducted a study on Cognitive and Emotional Factors Affecting Decision Making Delay among adult males with Acute Myocardial Infarction. The study was conducted in 118 Coronary Care Units at Italy. 929 AMI patients presented to the CCU in a conscious condition less than two hours, 2-6 hours, 6-12 hours, and more than 12 hours after symptom onset were added to the multicenter case-control study. The time delay was correlated with perceived threat. It was only slightly related to pain and was not associated with any of the other variables. Perceived threat was also related to psychological upset, fear and health worries. This study concluded that somatic awareness is the main dimension affecting perceived threat, but subjective pain intensity was also inversely proportional to treatment seeking time.

Hwang, et al., (2012) did a study to find Cognitive factors that influence delayed decision to seek treatment among older patients with acute myocardial infarction in Korea. Quantitative as well as qualitative analyses used. The sample included 94 male and 71 female patients hospitalized for first-time AMI at a university hospital in Korea. Multiple logistic regression analysis was used to predict delayed hospital presentation by > 6 hours. Results were the median pre-hospital delay time was 12 hours. They found that low education level, presence of pre-infarction angina pain, and attribution of symptoms to a non-cardiac origin as the predicting factors. Study suggested that educational activities should be planned for elderly Korean who are at high risk for AMI.

Farshidi, et al., (2012) conducted a study on factors associated with pre-hospital delay in patients with acute myocardial infarction. They evaluated the causes of pre-hospital delay on effect of variables such as socioeconomic and personal factors among patients with AMI. A cross sectional study was carried out on 227 patients with acute myocardial infarction. Patients having high level education ($P = 0.0492$) and with a family history of coronary artery disease ($P = 0.01$) had significantly less delay in arriving to hospital. Age, marital status, gender, and route of transfer to hospital were not related with pre-hospital delay ($P > 0.05$). Most common cause of delay in arrival was unawareness of coronary artery disease (38.8%) and self-medication (34.3%) by the patients.

Khraim, (2009) did a cross sectional descriptive survey study on patterns of pre hospital delay and trends of behavior in response to acute myocardial infarction in Jordan. A non-probability, convenient sample of 134 patients (110 men and 24 women) admitted with acute myocardial infarction was collected. The study showed that decision delay time among Jordanians was alarmingly long (medians were 3.5 hours for men and 3.6 hours for women). Variables that correspondingly predicted decision delay among men and women were age, waiting for symptoms to go away, anxiety due to symptom presentation, and others response to patients' symptoms. Results showed that cognitive variables had higher influence than emotional variables.

Kaur, Lopez & Thompson, (2006) conducted a study on Factors influencing decision-making in seeking early treatment for AMI among Hong Kong Chinese patients. Through in-depth interview, factors that influenced 27 Hong Kong Chinese

patients' decision-making in seeking early treatment for AMI were identified. The median delay time from the onset of symptoms to arrival at the hospital was 15.6 hours for men and 53.7 hours for women. Three major categories emerged from the data are becoming aware of the threat, maintaining a sense of normality, and struggling to mobilize resources. A variety of decisions were made by patients from the onset of chest pain to seeking help. These decisions were heavily influenced by healthcare factors such as access to emergency medical service (EMS) and treatment, personal factors like cognitive interpretations of symptoms, sociocultural factors includes family situation, cultural beliefs, and practices, and coping strategies.

Banks & Dracup, (2006) conducted study on factors associated with prolonged pre- hospital delay of African Americans with Acute Myocardial Infarction. Sixty-one African Americans with acute myocardial infarction were interviewed within 1 month of hospital admission. Delay times were calculated on the basis of the interviews. Median delay was 4.25 hours and did not differ significantly between women and men (4.42 Vs 3.50 hours). Most patients (69%) experienced their initial signs and symptoms at home, often witnessed by family members or friends (70%). Delay was longer for insured patients than for uninsured patients (4.45 Vs 0.50 hours). Single, widowed, or divorced patients had longer delay times than did married patients (5.33 Vs 2.50 hours), and patients with diabetes delayed longer than did those without diabetes (7.29 Vs 3.50 hours). Conclusions were median time delays were longer than the recommended one hour, declining the benefit from reperfusion therapies.

Mumford, Warr, Owen & Fraser, (1999) conducted a study on delays by the patients in seeking treatment for acute chest pain. The study was performed in 100 consecutive patients with suspected acute myocardial infarction. 50 patients from the University Hospital, United Kingdom and 50 from the Royal Jubilee Hospital, Canada. The main outcome measure was the delay from the onset of symptoms to admission to hospital. The mean total delay before admission was 385 minutes. The mean delay incurred by the patient in seeking assistance was 172 minutes, representing 45% from the total. Patients with crescendo angina had longer delay and shorter in those later confirmed to have myocardial infarction. Patients with previous history of IHD (74%) came late than those with no history. No other demographic or clinical factors predicted early or late arrival.

Section D: Literature related to treatment modalities among patients with Acute Myocardial Infarction.

Sim, et al., (2012) conducted a study on benefit of PCI in early latecomers with acute STEMI. They evaluated the efficacy of PCI in 2,344 stable patients with STEMI reached between 12 to 72 hours after onset of the symptoms. The patients were divided into PCI group (n = 1,889) and medical treatment group (n = 455). The 12-month clinical outcome was compared between these groups. The study found that the PCI group had lower mortality and a lower incidence of composite death or MI as compared to medically treated group. The benefit of PCI was consistent among patients with acute STEMI. In conclusion, stable patients with STEMI presenting 12 to 72 hours after symptom onset, PCI was associated with significant improvement than medical treatment.

Boer, et al., (2002) conducted a comparative study on reperfusion therapy in elderly patients with Acute Myocardial Infarction between primary angioplasty and thrombolytic therapy. Totally 87 patients with an AMI older than 75 years treated with angioplasty or intravenous streptokinase were included. This study concluded that patients with AMI who were older than 75 years, the benefit from primary coronary angioplasty was more when compared with IV streptokinase therapy in terms of clinical outcome.

Bouhajja, et al., 2014, conducted a study on evaluation of fibrinolysis with streptokinase in ST-elevation myocardial infarction patients. Out of the 329 STEMI enrolled during the study period, 224 (68%) were thrombolysed. The 2/3rd of patients had consulted during the first 3 hours. The average success rate of thrombolysis was reached 83% during the first hour, 66% in the second hour and 58.7% in the third hour. Independent predictors for success of a fibrinolysis were active smoking, current treatment with beta blockers and the delay from onset chest pain to the ED visit less than 180 minutes. Diabetes associated with fibrinolysis was failure. Two patients suffered intra-cerebral hemorrhages. Three patients died in the emergency department. 2/3rd patients with STEMI have consulted 3 h after-onset of chest pain**.** Fibrinolysis using SK was effective in 59% of cases.

CHAPTER-III

METHODOLOGY

This chapter explains the methodology adopted by the researcher toexplore the Factors Related to Treatment Seeking Delay among Adults Diagnosed with Acute Myocardial Infarction at KMCH, Coimbatore.

RESEARCH DESIGN

This study used retrospective design.

VARIABLES

Focused variables were Demographic**,** Clinical, Cognitive and Social support factors.

SETTING OF THE STUDY

The study conducted on hospitalized adults with a confirmed diagnosis of AMI through emergency department at KMCH Coimbatore.

POPULATION OF THE STUDY

The populations included in this study were hospitalized adults with a confirmed diagnosis of AMI at KMCH

SAMPLE SIZE

The sample size was 93 from which 51 sought treatment before 120 minutes and 42 sought treatment after 120 minutes from the onset of symptoms with a confirmed diagnosis of AMI.

SAMPLING TECHNIQUE

Non-probability purposive sampling was adapted to select the samples for the study.

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria

1. Patient who had a medical diagnosis of AMI that was confirmed by classic electrocardiogram changes (ECG) and/or abnormal cardiac bio-markers such as elevated cardiac enzymes troponin-T and CK-MB;
2. Patient who were hemo-dynamically stable condition confirmed by stable vital signs and being free of chest pain and/or discomfort at the time of the interview;
3. Patients who were above 18 years of age, both male and female;
4. Patient who were alert and oriented to person, place, time and situation with no history of cognitive impairment.

Exclusion Criteria

1. Patients who were critically ill.
2. If AMI was a subsequent medical diagnosis and not the initial reason for seeking treatment.
3. Patients with previous history of AMI.

DEVELOPMENT AND DESCRIPTION OF TOOL

It consist of four parts:

PART I : Deals with demographic data.

PART II : ACS Clinical Data Extraction Form.

PART III : Cognitive factors assessment questionnaire.

PART IV : Duke Social support scale.

PART I : Deals with demographic data.

Demographic factors such as age, gender, marital status, education, type of family, occupation, monthly income were included.

PART II : ACS Clinical Data Extraction Form.

Clinical factors such as history of AMI, presenting symptoms (typical and atypical- not accompanied by chest pain) of AMI, self-reported pain level on arrival, history of co-morbid illness were included.

PART III : Cognitive factors assessment questionnaire.

It consists of three parts.

A) Knowledge regarding AMI,

B) Symptom perception and

C) Perceived level of seriousness, measured by researcher prepared questionnaire.

A) Knowledge regarding AMI.

This contains 8 questions with score of maximum 20 marks. Categorization is done as:

Score '0-5' - poor knowledge.
Score '6-10' - average knowledge.
Score '11-15' - good knowledge.
Score '16-20' - very good knowledge.

B) Symptom Perception.

This contains 5 point scale to explore how similarly the patients perceived symptoms.

1 - Not at all similar
2 - Mildly similar
3 - Moderately similar
4 - Very similar
5 - Extremely similar

C) Perceived Level of Seriousness. This contains 5 point scale to explore the how seriously patient perceived their symptoms.

1 - Not at all serious

2 - Mildly serious

3 - Moderately serious

4 - Very serious

5 - Extremely serious

PART IV : Duke Social support scale.

DUCK SOCIAL SUPPORT AND STRESS SCALE was prepared by Department of Community and Family Medicine, Duke University Medical Center, Durham, NC, USA. Duke Social support scale is a part of it and works to capture an individual's perceptions of how supportive or stressful his or her relationships with others. This was used to explore the level of social support received by patient at this movement of his life. Both family and non-familial support was explored. Using a 4 point scale ("none", "some", "a lot", "there is no such person") and a yes or no question. The respondent rates his or her family members, non-family members and special supportive person as people who give personal support (12 items). Raw scores allotted as 'none'- '0', 'some'– '1', 'a lot'– '2', 'there is no such person'– '0', 'yes'– '2', 'no'– '0'. Total support was derived from the addition of family, non-family and special support scores and dividing by 22. The scores are obtained between 0-100. For the purpose of analysis the family, non-family and social support was divide into two categories. '0-50'- inadequate support, '51-100'- adequate support. The dukes stress scale was not used for this study.

VALIDITY

The validity of the tool was established by submitting the questionnaires to the experts in the field of medical surgical nursing as well as medical experts. Based on their suggestions and recommendation, the main study carried out.

RELIABILITY

Cronbach's Alpha method is used to establish the reliability of the tool. The reliability coefficients of the cognitive factor assessment questionnaire was found to be satisfactory (knowledge questionnaire- $\alpha = 0.785$, symptom perception scale- $\alpha = 0.823$ and perceived seriousness scale- $\alpha = 0.939$). DUCK SOCIAL SUPPORT SCALE is a standardized scale and has a reliability score of 0.76 for family support and 0.67 for nonfamily support respectively.

PILOT STUDY

Pilot study was conducted in Kovai Medical Center Hospital. The researcher obtained permission from concerned authority prior to the pilot study. The study was done with 26 samples by non-probability purposive sampling technique, the samples were not included in main study and it was found to be practically feasible.

PROCEDURE FOR DATA COLLECTION

The prior permission was obtained from the ethical committee, concerned authorities and the participants who met the specified inclusion criteria. Data were collected using structured questionnaire by interviewing patients. Data collected by in-person interviews to reduce the possibility of missing data. In order to limit any personal bias during data collection, the investigator used the open and closed-ended questions from the questionnaires to guide the interview. Patients' identified from emergency department as soon as they got admitted in the hospital. Researcher met the patient and explained about the study in detail to comfort patient. After obtaining oral consent, interview procedure carried out. The clinical data of arrival time to hospital was collected from patients' case sheet to ensure the time delay. Approximately 30 minutes were taken by each participants for completely answering to all the tools used in the study. The questionnaires allowed for the patient to give a descriptive, narrative account of the events from the time of the onset of symptoms until they reached the emergency department.

STATISTICAL ANALYSIS

The obtained data were analyzed by using the descriptive statistics such as percentage analysis, mean and standard deviation and inferential statistics wise Mann-Whitney U test was used for comparing the factors by using IBM SPSS statistics data editor software.

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the description of the study subjects, analysis and description of data collected to explore the factors related to treatment seeking delay among adults diagnosed with Acute Myocardial Infarction.

Section I: Description of Demographic Variables.

Section II: Description of Clinical Data.

Section III: Description of Clinical Factor influencing treatment seeking time.

Section IV: Distribution of Cognitive Factors influencing treatment seeking time.

Section V: Distribution of Social Support Scores.

Section VI: Comparison of Clinical and other Factors determining treatment seeking time.

SECTION –I: DESCRIPTION OF DEMOGRAPHIC VARIABLES

TABLE-1: Distribution of subjects according to demographic variables

SL. No	Demographic Variables	Timely Group (<120 minutes) (N=51)		Delayed Group (>120 minutes) (N=42)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Age in Years				
	a. 31-40	6	12	3	7
	b. 41-50	10	20	12	29
	c. >50	35	69	27	64
2	Gender				
	a. Male	49	96	32	76
	b. Female	2	4	10	24
3	Marital Status				
	a. Married	49	96	40	95
	b. Unmarried	1	2	0	0
	c. Widow/Widower	1	2	2	5
4	Education				
	a. Illiterate	23	45	22	52
	b. Primary Education	10	20	11	26
	c. Higher Secondary education	6	12	4	10
	d. Degree	12	23	5	12
5	Occupation				
	a. Working Full Time	25	49	21	50
	b. Working Part Time	7	14	5	12
	c. Retired or unemployed	15	29	14	33
	d. Disabled, not able to work	4	8	2	5
6	Income				
	a. Less than Rs.10,000	13	25	10	24
	b. Rs.11,000-Rs.20,000	13	25	17	40
	c. Rs.21,000-Rs.30,000	16	31	7	17
	d. Above Rs.Rs.30,000	9	19	8	19
7	Type of Family				
	a. Nuclear	36	71	27	64
	b. Joint	15	29	15	36

Table 1 depicts the distribution of subjects within two groups according to the demographical variables. In both the groups majority were above 50 years of age, male, married. More number of subjects who sought delayed treatment were illiterate. No subjects were in age of 20-30 years, in divorced group and in extended family group.

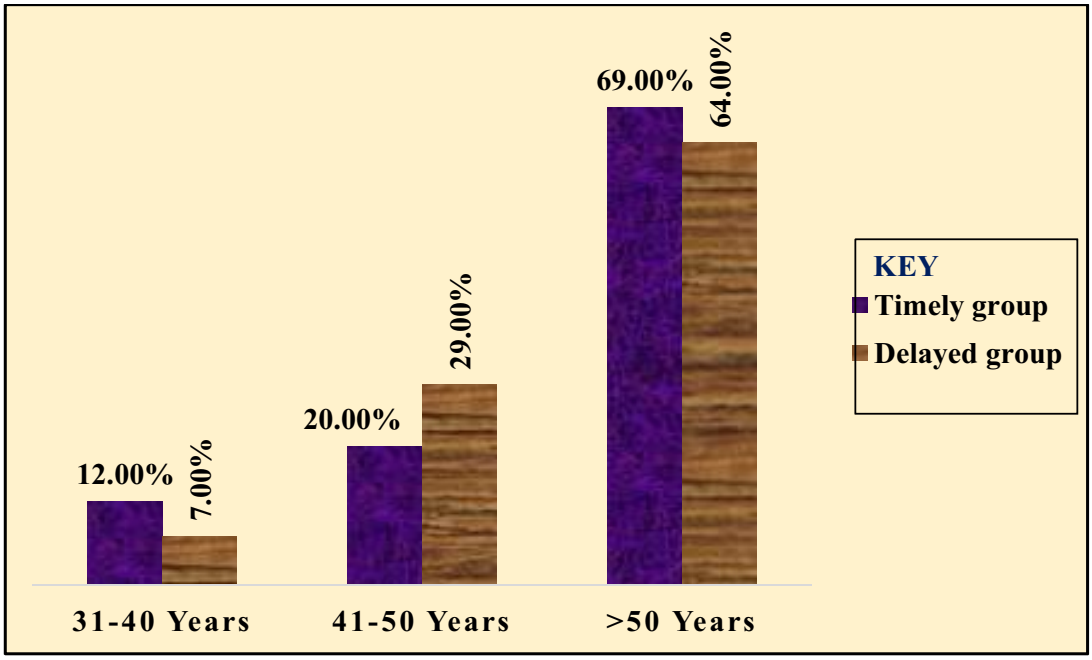

Figure 2: Age wise distribution of subjects in both group.

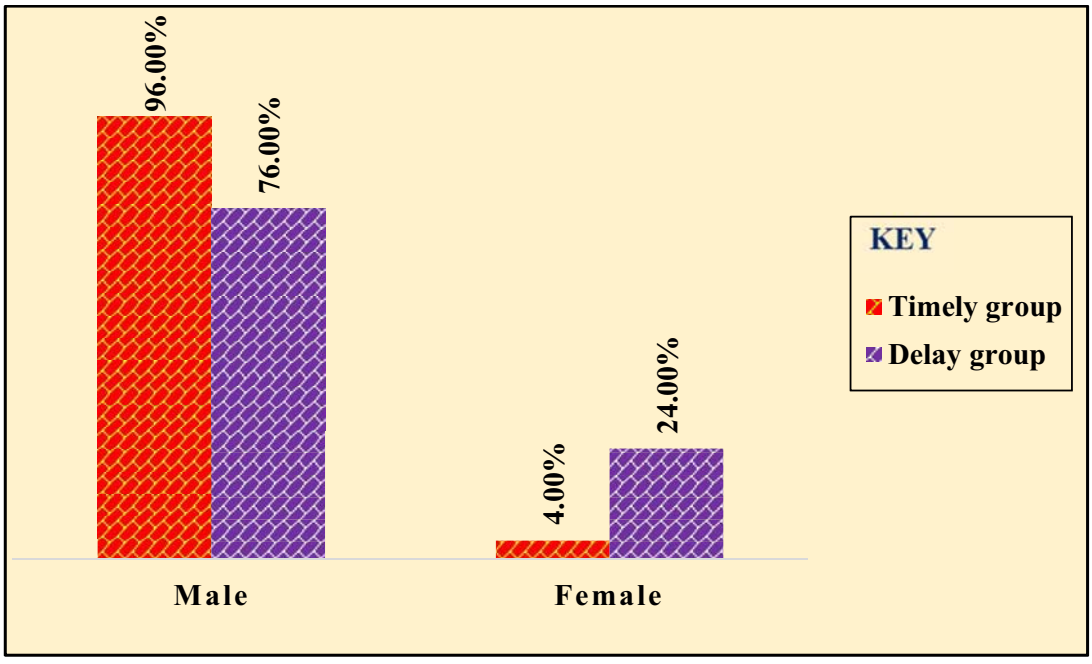

Figure 3: Gender wise distribution of subjects in both group.

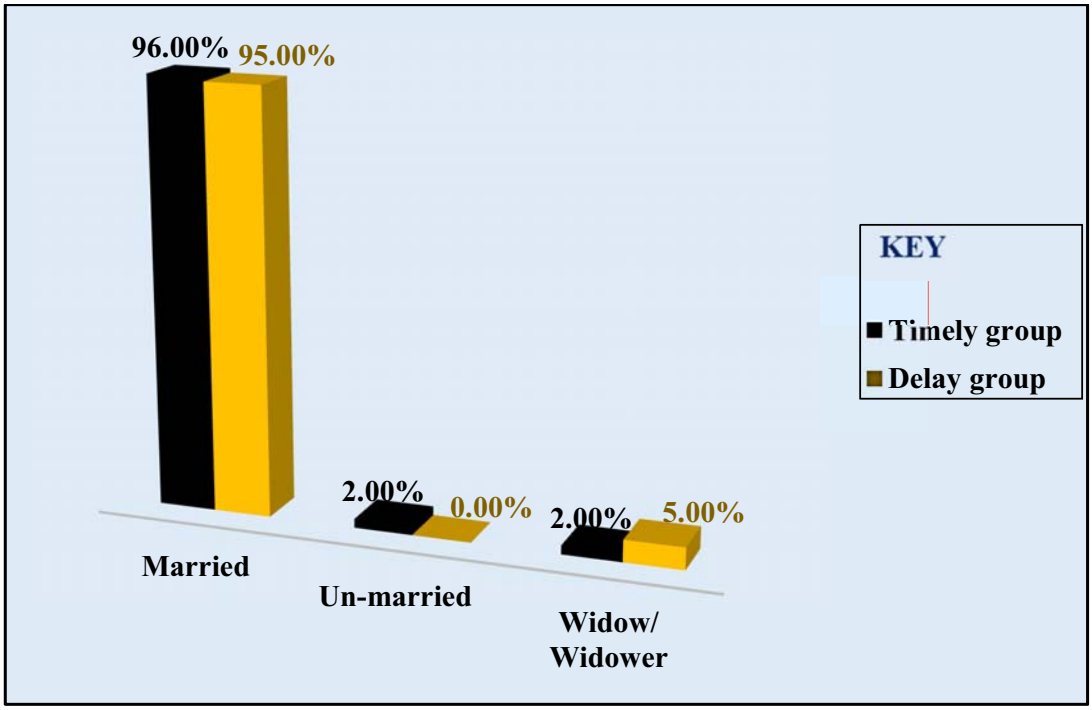

Figure 4: Distribution of subjects in both group according to Marital Status.

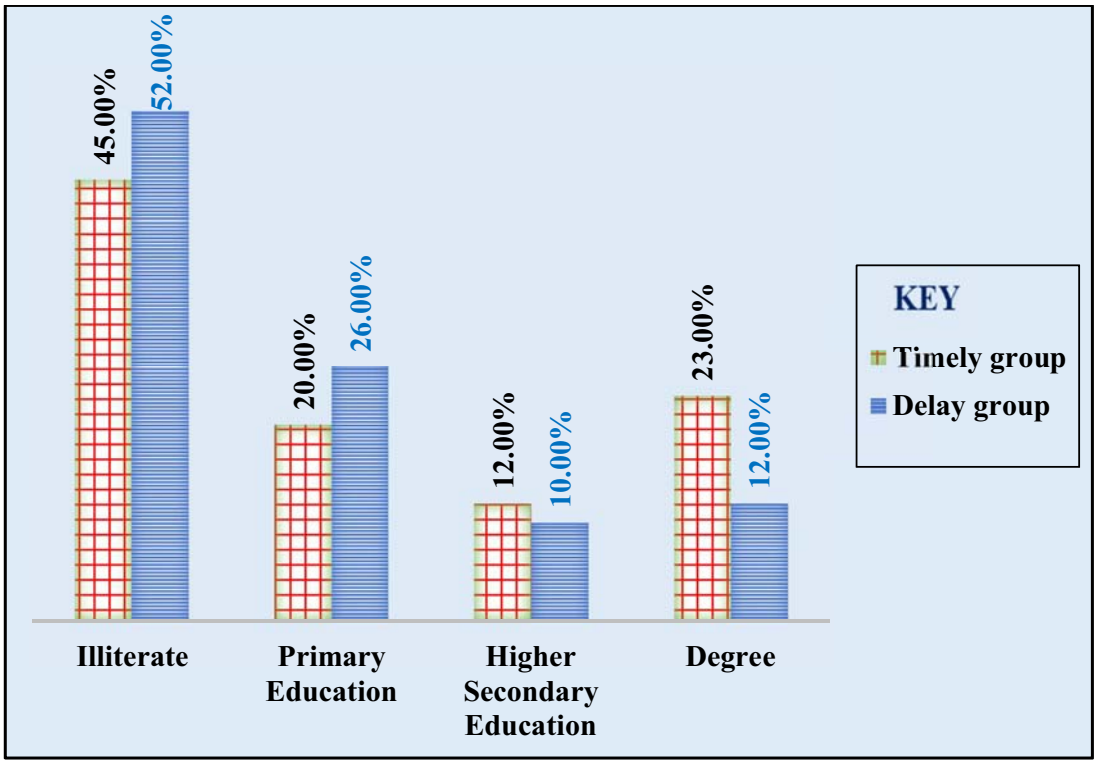

Figure 5: Distribution of subjects in both group according to Education.

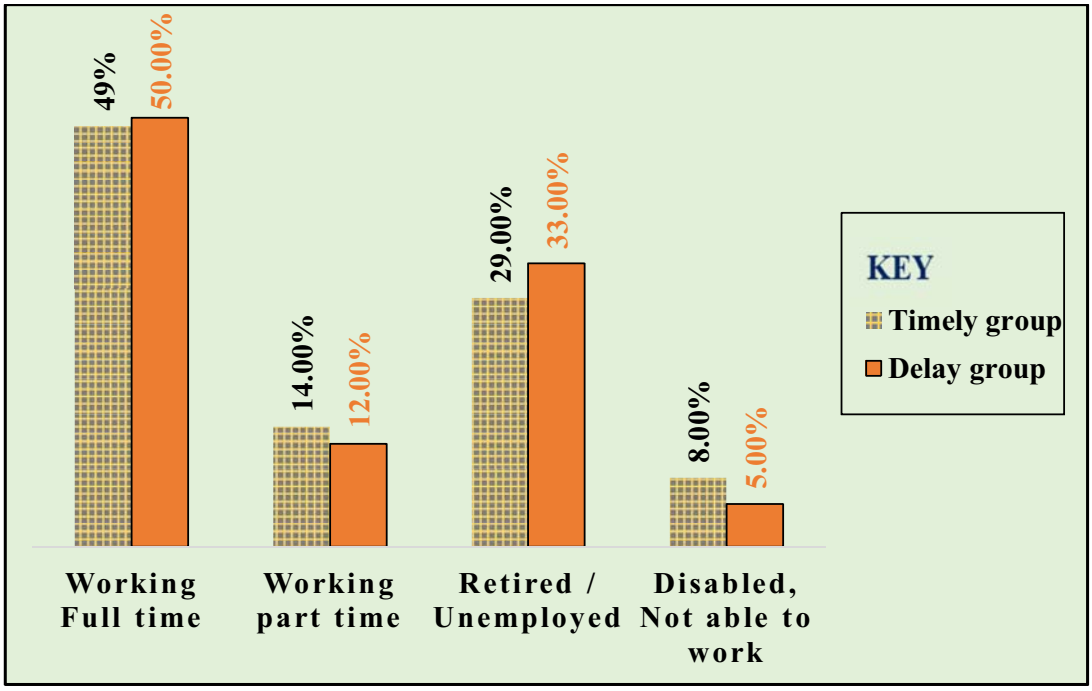

Figure 6: Distribution of subjects in both group according to Occupation.

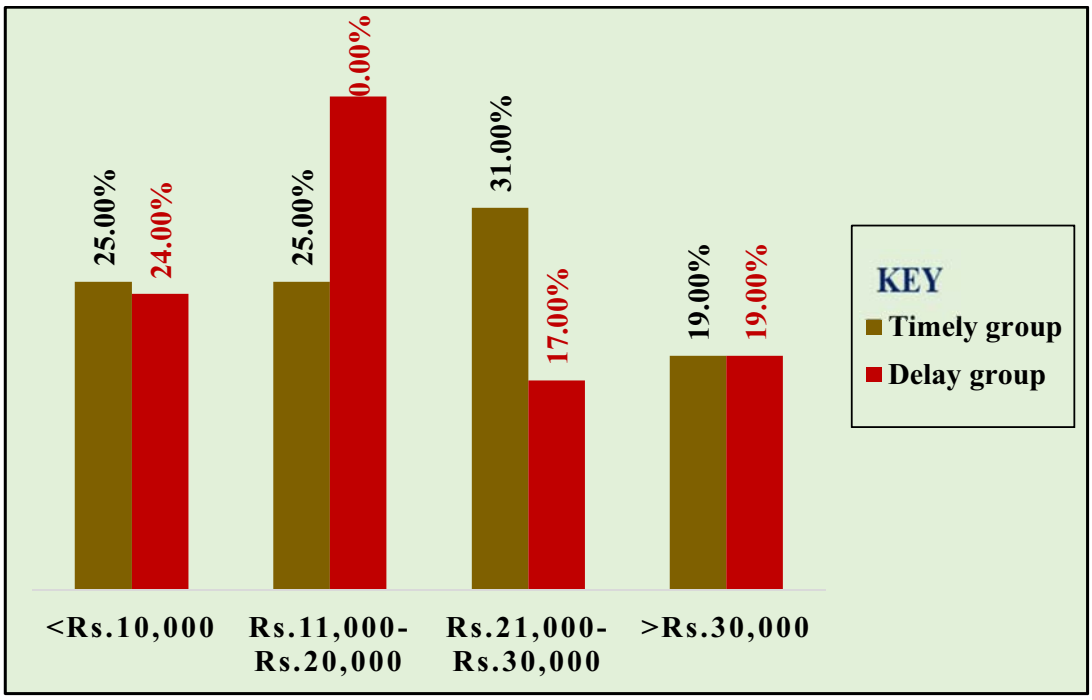

Figure 7: Distribution of subjects in both group according to Monthly Income.

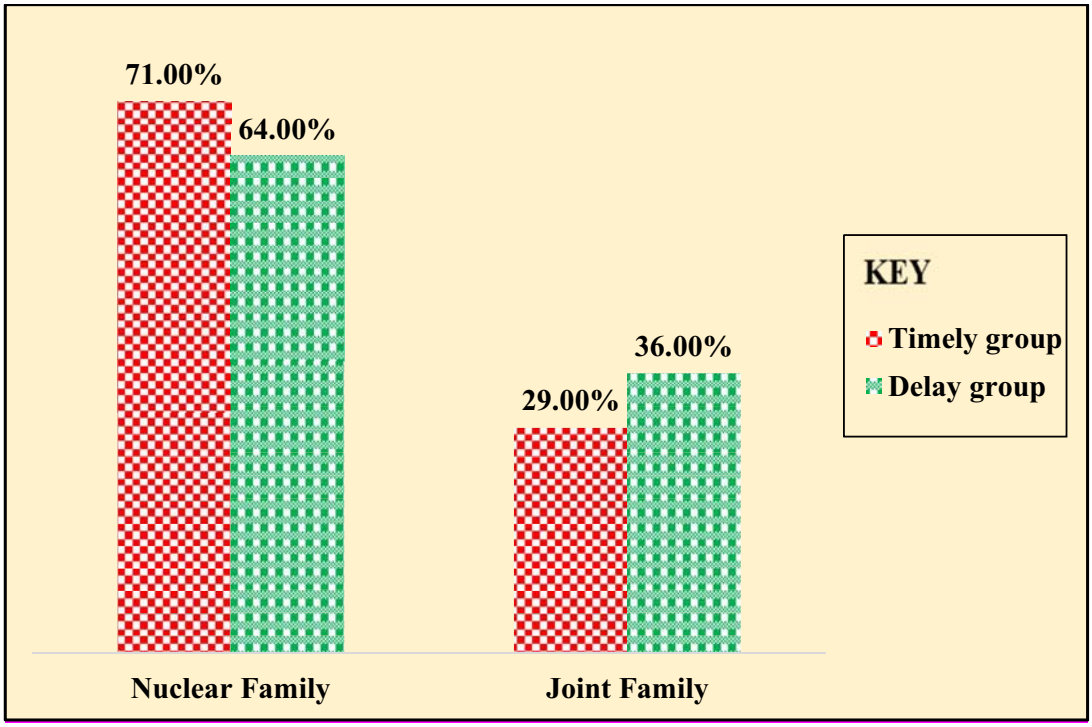

Figure 8: Distribution of subjects in both group according to Type of Family.

SECTION –II: DESCRIPTION OF CLINICAL DATA

TABLE-2: Distribution of subjects according to Clinical Data.

SL. NO.	Clinical data	Timely Group (<120 minutes) (N=51)		Delayed Group (>120 minutes) (N=42)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Co-morbid Illness				
	a. HTN	13	25	7	17
	b. DM	10	20	5	12
	c. HTN & DM	10	20	6	14
	d. Nil	18	35	24	57
2	Symptoms				
	a.1-2 Typical symptoms	31	61	26	62
	b. All the Typical Symptoms (3 and above)	19	37	16	38
	c. Completely Atypical Symptoms (not accompanied by chest pain)	1	2	0	0

Table 2 depicts the distribution of subjects within two groups according to the clinical data. In both timely and delayed treatment seeking groups' majority of subjects had no co-morbid illness and had experienced 1 to 2 typical symptoms. Out of 51 subjects who sought timely treatment one subject (2%) had experienced completely atypical symptoms like sweating and fainting.

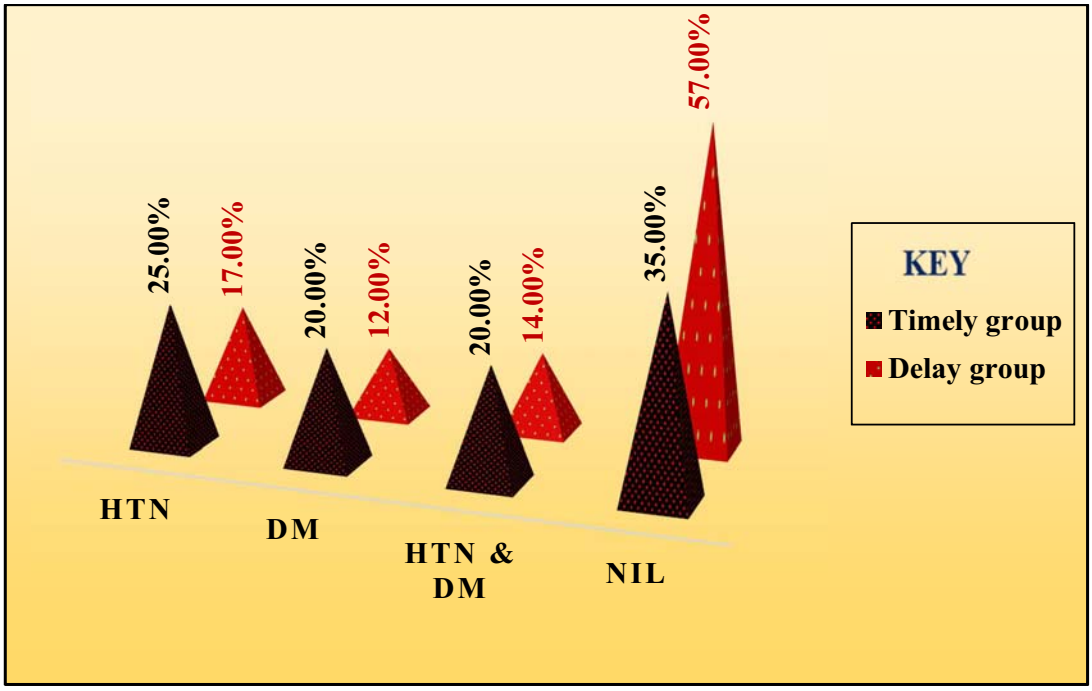

Figure 9: Distribution of subjects in both group according to Co-morbidity.

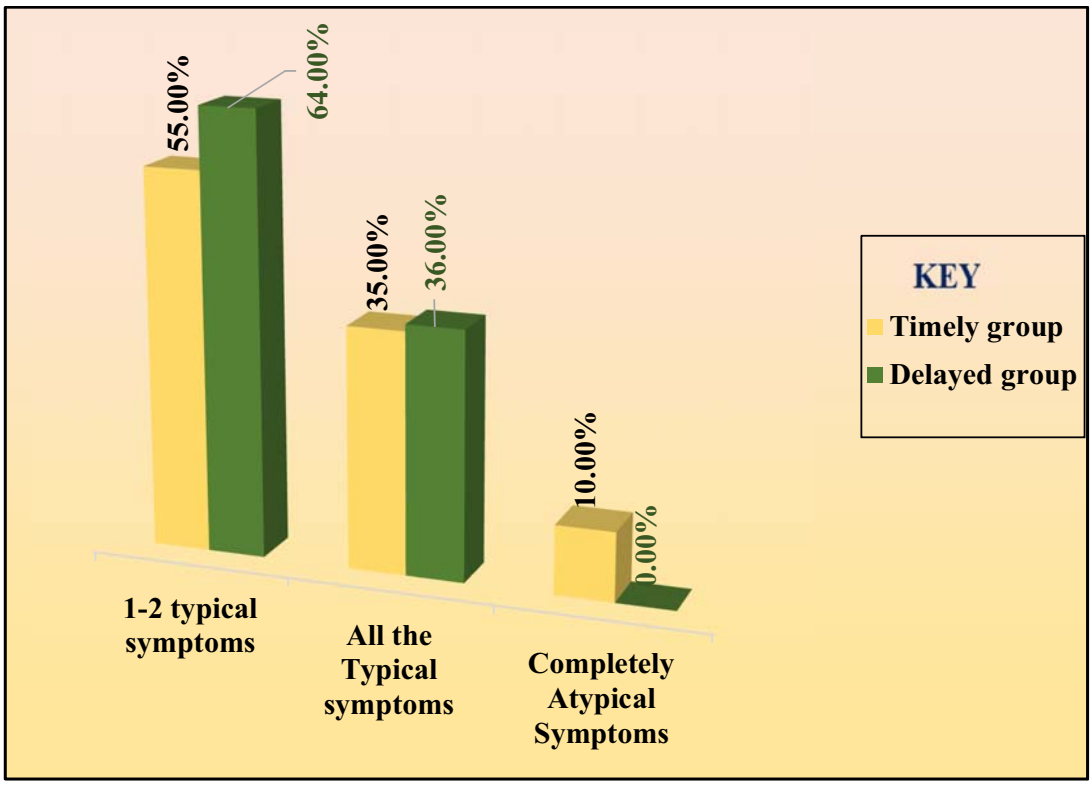

Figure 10: Distribution according to presence of Typical Symptoms.

TABLE-3: Distribution of subjects who sought treatment from onset of symptoms to arrival at ER in less than 120 minutes.

SL. No.	Clinical data	Timely Group (N=51)	
		Frequency	Percentage (%)
1	Time duration in minutes		
	a. 0-60	35	69
	b. 61-120	16	31

Table 3 shows the distribution of subjects who sought timely treatment.

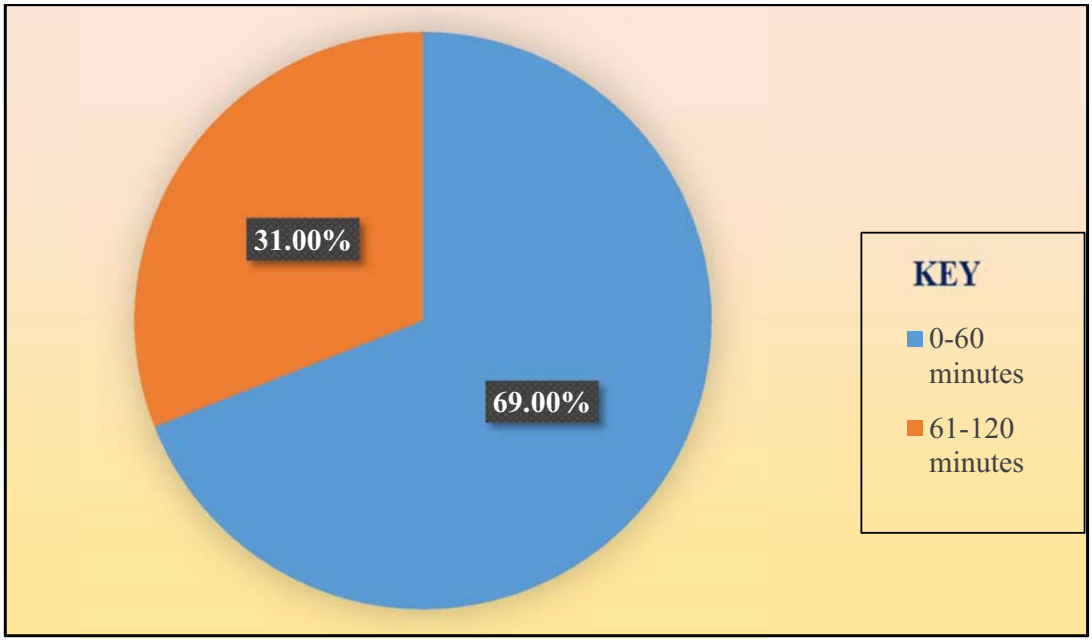

Figure 11: Distribution of subjects who sought timely treatment.

TABLE-4: Distribution of subjects who sought delayed treatment after 120 minutes from the onset of symptoms.

SL. No.	Clinical data	Delayed Group (N=42)	
		Frequency	Percentage (%)
1	Time duration in minutes (extent of delay)		
	a. 2-6 hours	21	50
	b. 6-12 hours	7	17
	c. 12-18 hours	4	9
	d. 18-24 hours	5	12
	e. 24-48 hours	3	7
	f. Above 48 hours	2	5

Table 4 shows the extent of time delay of the subjects who sought treatment after 120 minutes from the onset of the symptoms. There were two subjects (5%) who sought treatment after two days.

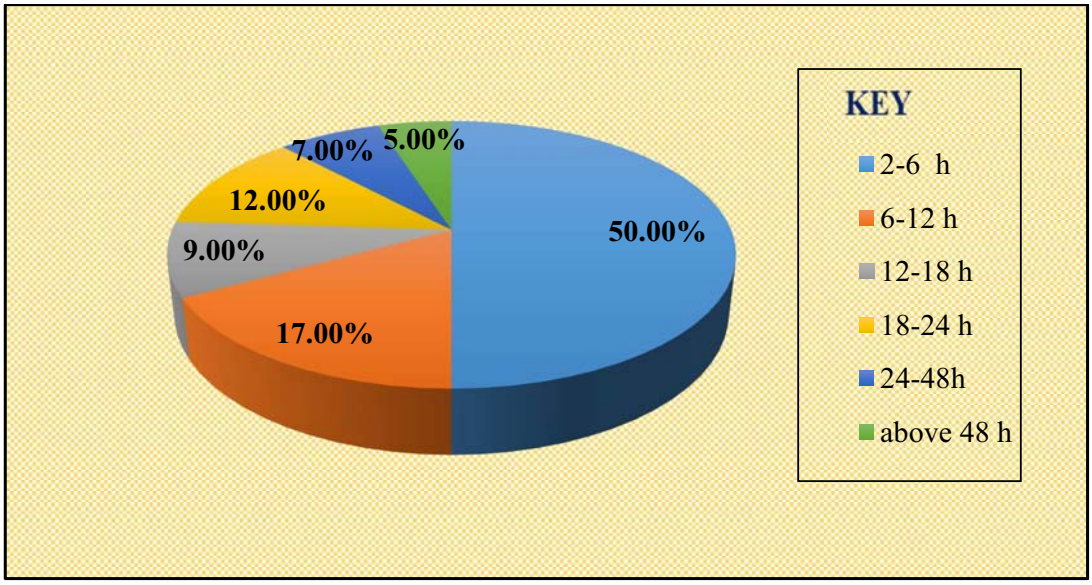

Figure 12: Distribution of subjects who sought delayed treatment. This shows almost half of them sought treatment within 2 to 6 hours after onset of symptoms.

SECTION –III: DESCRIPTION OF CLINICAL FACTOR INFLUENCING TREATMENT SEEKING TIME

TABLE-5: Distribution of subjects according to Pain Score and Chest Pain.

SL. No.	Clinical Factors	Timely Group (<120 minutes) (N=51)		Delayed Group (>120 minutes) (N=42)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Pain Score				
	a. 0	8	16	10	24
	b. 1-2 (mild)	8	16	13	31
	c. 3-6 (moderate)	29	56	19	45
	d. 7-10 (severe)	6	12	0	0
2	Chest Pain				
	a. Pain other than chest region	8	16	8	19
	b. Chest Pain with other Symptoms	42	82	31	74
	c. Only Chest Pain	1	2	3	7

Table 5 depicts two things, pain score and presence of chest pain. Majority of subjects who sought timely treatment as well as delayed treatment had experienced moderate pain level. Eight (16 %) of subjects and 10 (24 %) of subjects who sought timely and delayed treatment respectively experienced absolutely no pain. Subjects with reduced pain were higher in delayed group. As the pain score increases the number of subjects were also increased in timely treatment seeking group. Majority of subjects in both groups had experienced chest pain with other symptoms.

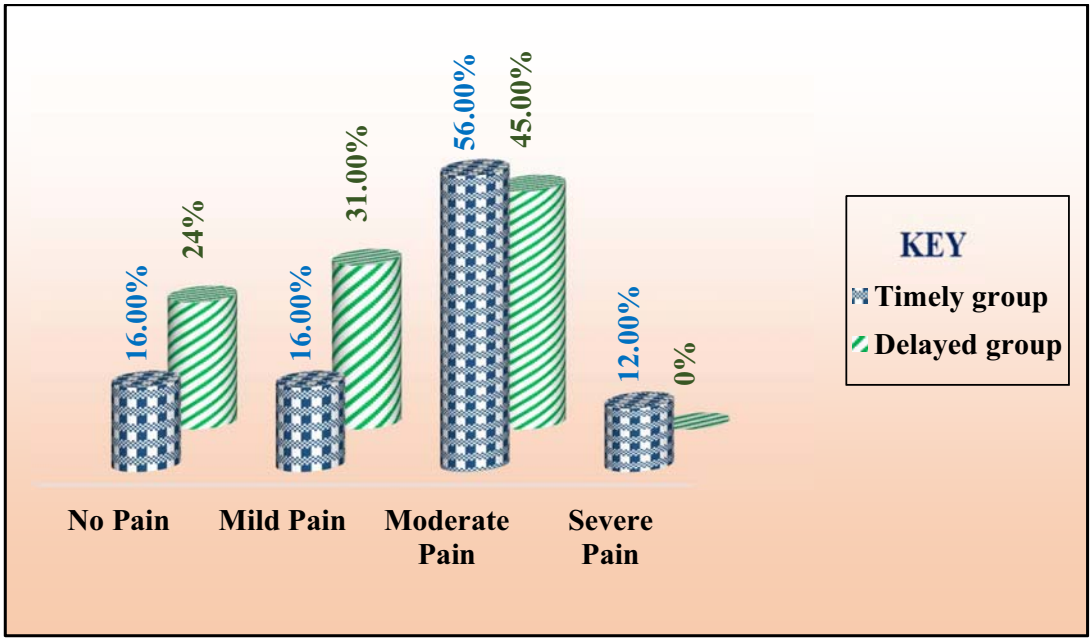

Figure 13: Distribution of subjects according to their Pain Score.

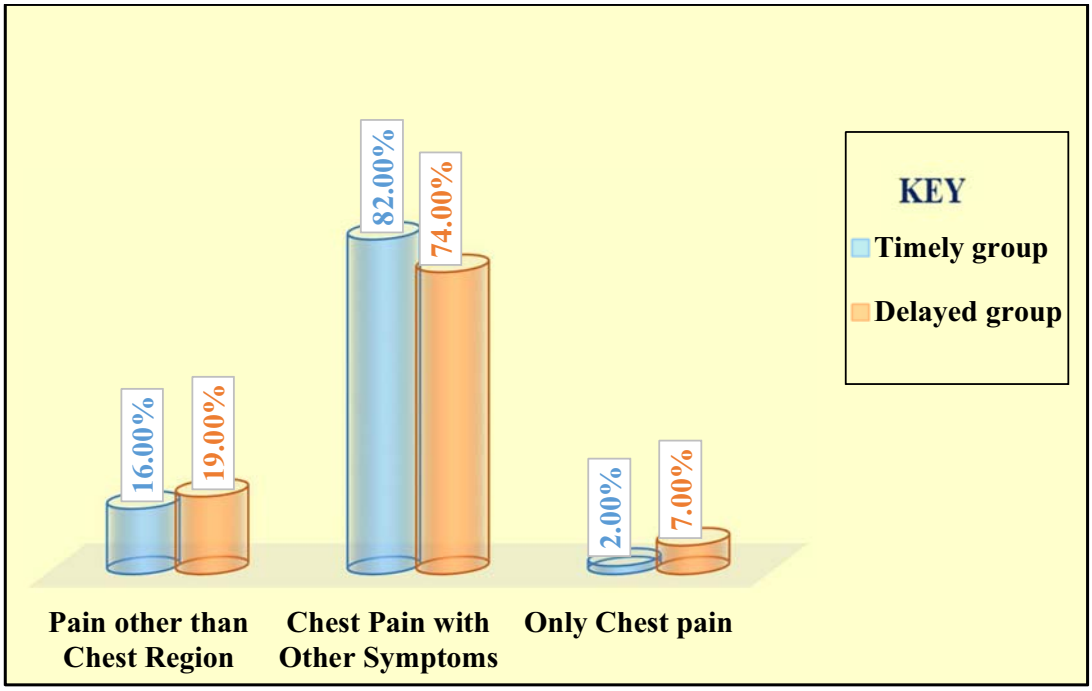

Figure 14: Distribution of subjects according to Presence of Chest Pain.

SECTION –IV: DISTRIBUTION OF COGNITIVE FACTORS INFLUENCING TREATMENT SEEKING TIME

TABLE-6: Distribution of subjects according to Knowledge Score, Symptom Perception and Perceived Seriousness.

SL. No.	Cognitive Factors	Timely Group (<120 minutes) (N=51)		Delayed Group (>120 minutes) (N=42)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Knowledge about AMI				
	a. Poor (0-5)	5	10	23	55
	b. Average (6-10)	15	29	9	21
	c. Good (11-15)	14	28	5	12
	d. Very Good (16-20)	17	33	5	12
2	Symptom Perception				
	a. 1 (Not at all Similar)	6	12	33	79
	b. 2 (Mildly Similar)	2	4	6	14
	c. 3 (Moderately Similar)	14	27	2	5
	d. 4 (Very Similar)	14	27	0	0
	e. 5 (Extremely Similar)	15	30	1	2
3	Perceived Level of Seriousness				
	a. 1 (Not at all serious)	1	2	21	50
	b. 2 (Mildly serious)	0	0	12	29
	c. 3 (Moderately serious)	0	0	6	14
	d. 4 (Very serious)	8	16	2	5
	e. 5 (Extremely serious)	42	82	1	2

Table 6 depicts distribution of subjects according to cognitive factors that has three components namely knowledge score, symptom perception and perceived level of seriousness. This shows that most of the subjects who sought delayed treatment (55%) had poor knowledge and most of the subjects who sought timely treatment (33%) had very good knowledge about AMI. Symptom perception describes that subjects who did not perceived their symptoms were highest (79%) in delayed treatment seeking group. Highest number of subjects (82%) in timely treatment seeking group had perceived extremely serious about their condition.

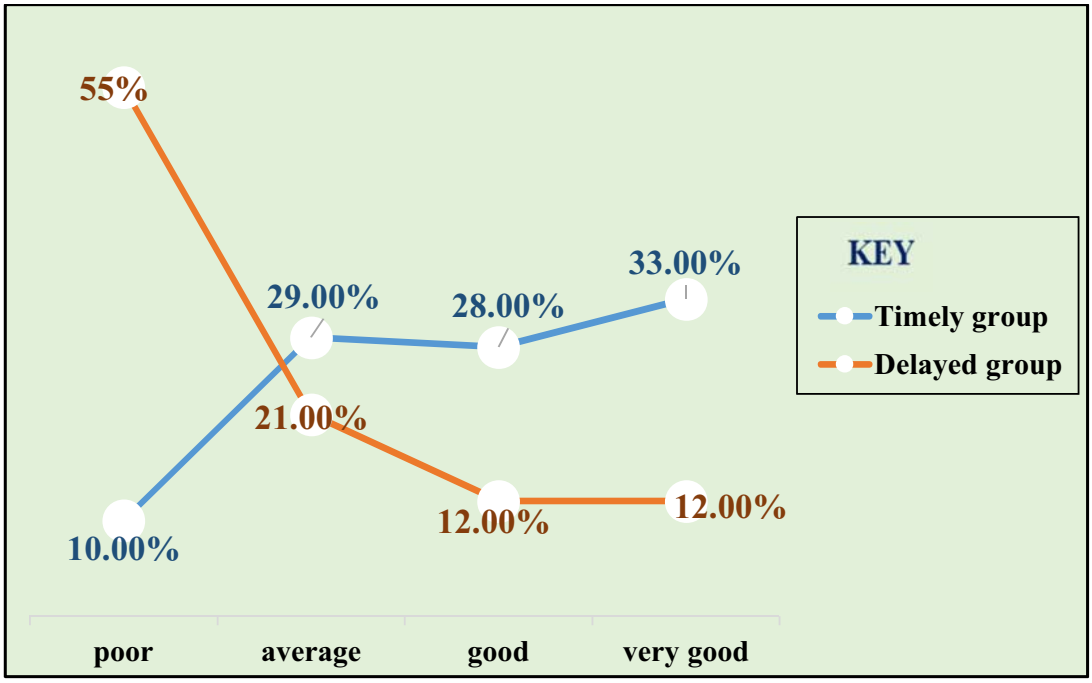

Figure 15: Distribution of subjects according to their Knowledge Scores.

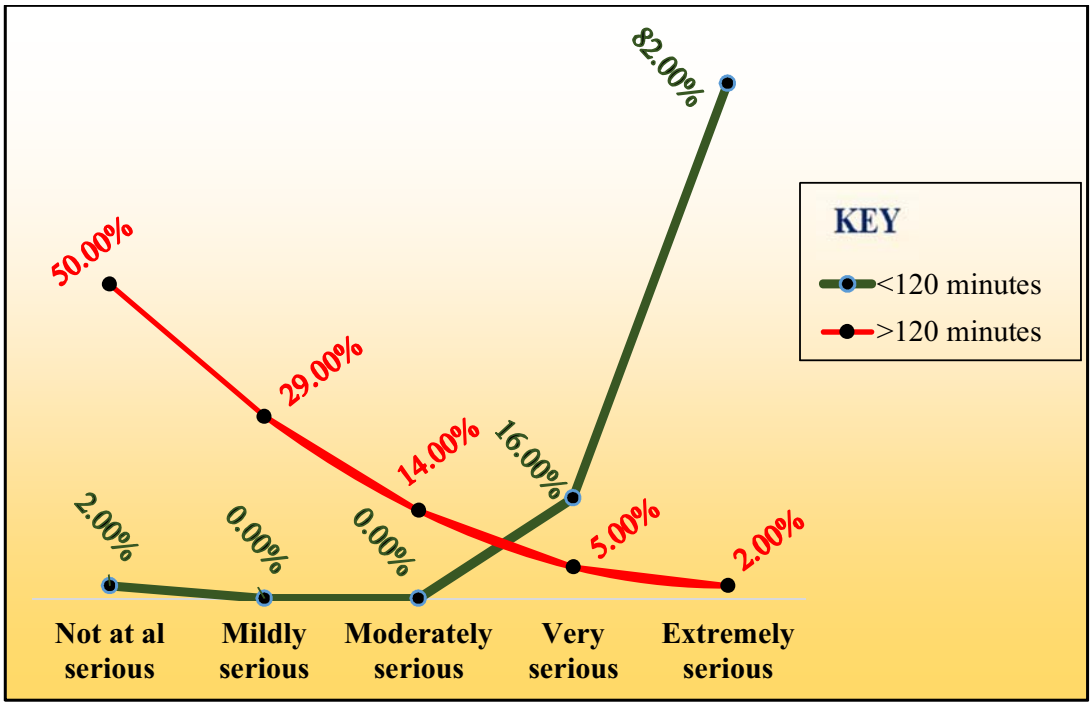

Figure 16: Distribution of subjects according to their Perceived Seriousness.

SECTION –V: DISTRIBUTION OF SOCIAL SUPPORT SCORES

TABLE-7: Distribution of subjects according to DUSOCS Family support score, DUSOCS Non-family support score and DUSOCS Social Support score calculated by using DUKE SOCIAL SUPPORT SCALE.

SL. No.	DUSOCS Social Support	Timely Group (<120 minutes) (N=51)		Delayed Group (>120 minutes) (N=42)	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	DUSOCS Family Support score				
	a. 0-50 (Inadequate)	21	41	28	67
	b. 51-100 (Adequate)	30	59	14	33
2	DUSOCS Non-Family Support Score				
	a. 0 (No support)	19	37	32	76
	b. 1-50 (Inadequate)	22	43	10	24
	c. 51-100 (Adequate)	10	20	0	0
3	DUSOCS Social Support Score				
	a. 0-50 (Inadequate)	28	55	39	93
	b. 51-100 (Adequate)	23	45	3	7

Table 7 depicts distribution of subjects according to family support scores, non-family support scores and social support scores.

Family support scores shows that out of 51 subjects who sought timely treatment, 41% got inadequate and 59% got adequate family support respectively. Out of 42 subjects who sought delayed treatment, 67% got inadequate and 33% got adequate family support. Non-family support score shows that most subjects (76%) sought delayed treatment did not received non-family support at all. Also 19 out of 51 subjects who sought timely treatment did not received any non-family support. Social support scores shows that most of the subjects (93%) who delayed in seeking treatment had received inadequate social support.

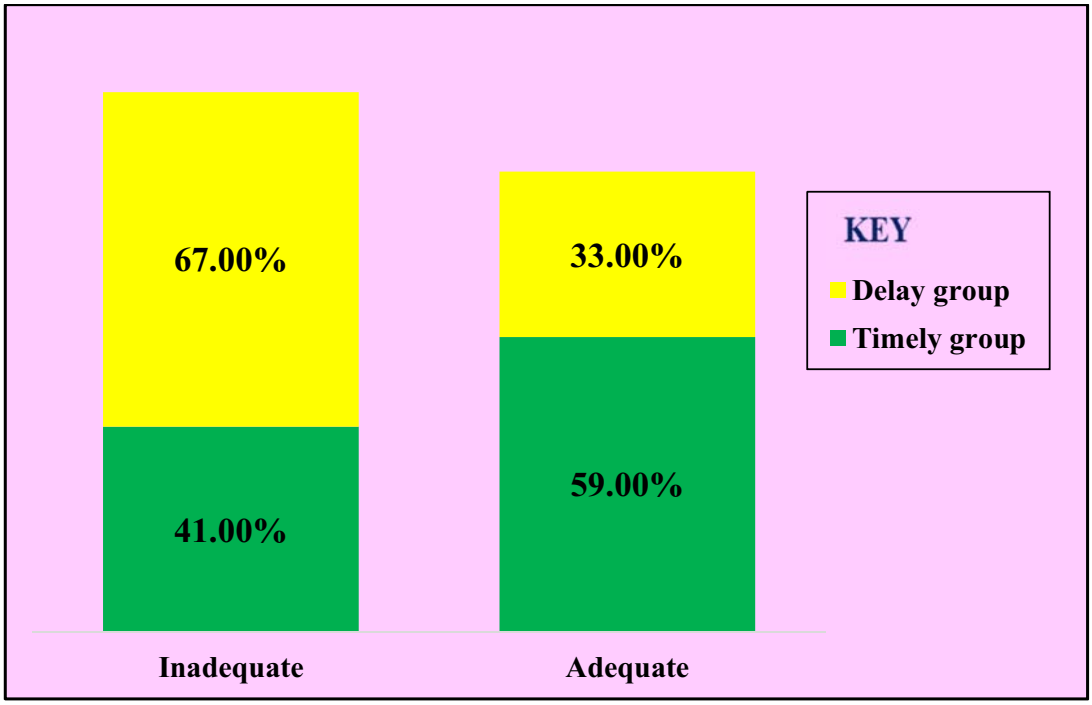

Figure 17: Distribution of subjects according to DUSOCS Family Support score.

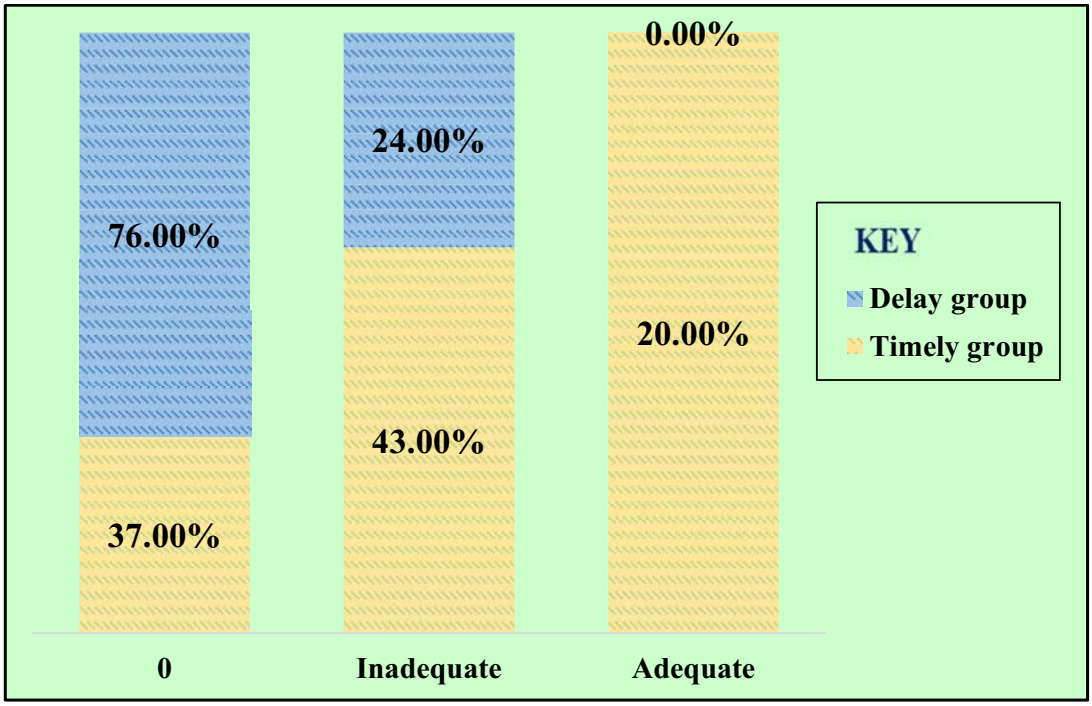

Figure 18: Distribution of subjects according to DUSOCS Non-Family Support score.

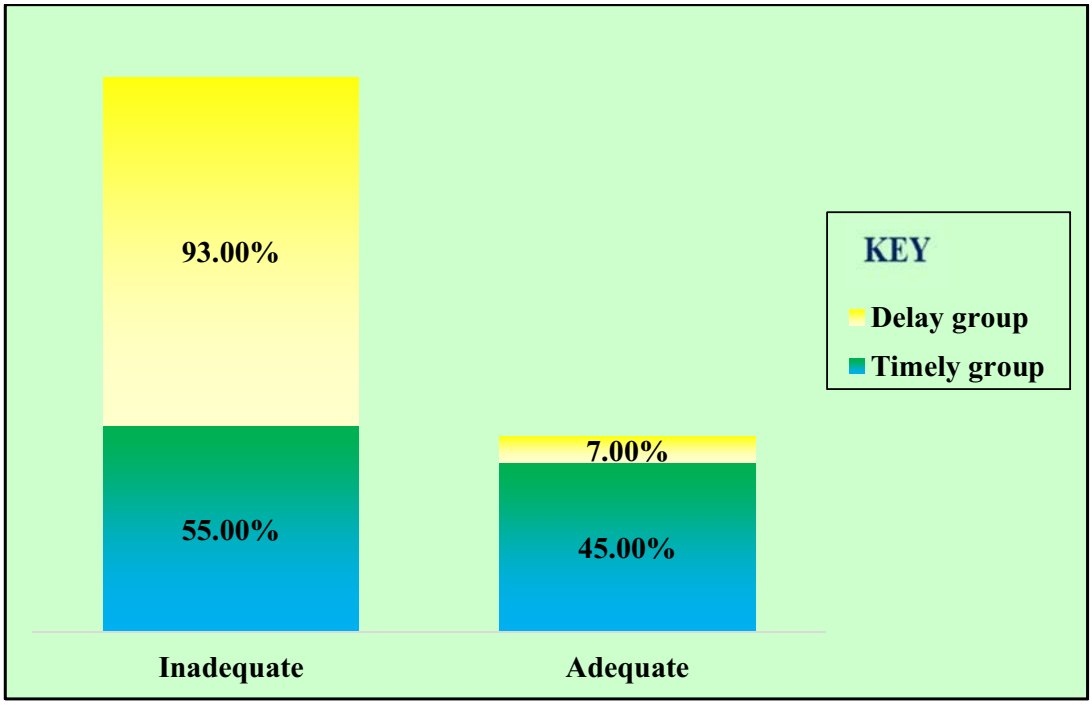

Figure 19: Distribution of subjects according to DUSOCS Social Support score.

SECTION –VI: COMPARE THE CLINICAL AND OTHER FACTORS DETERMINING TREATMENT SEEKING TIME

TABLE-8: Comparison of pain scores of subjects between delayed and timely treatment seeking group.

SL. No.	Pain Score	N	Mean	S.D	Sig. Value
1	>120 Minutes (Delay Group)	42	2.2619	1.72584	0.037*
2	<120 Minutes (Timely Group)	51	3.3725	2.46545	

Significance P<0.05

Table 8 shows that the mean pain score of subjects who sought delayed treatment is less than those who sought timely treatment, thus reduced pain level in the subjects with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney U test) 0.037 for pain score, is significant at $p<0.05$. Thus there is a significant difference between pain scores of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

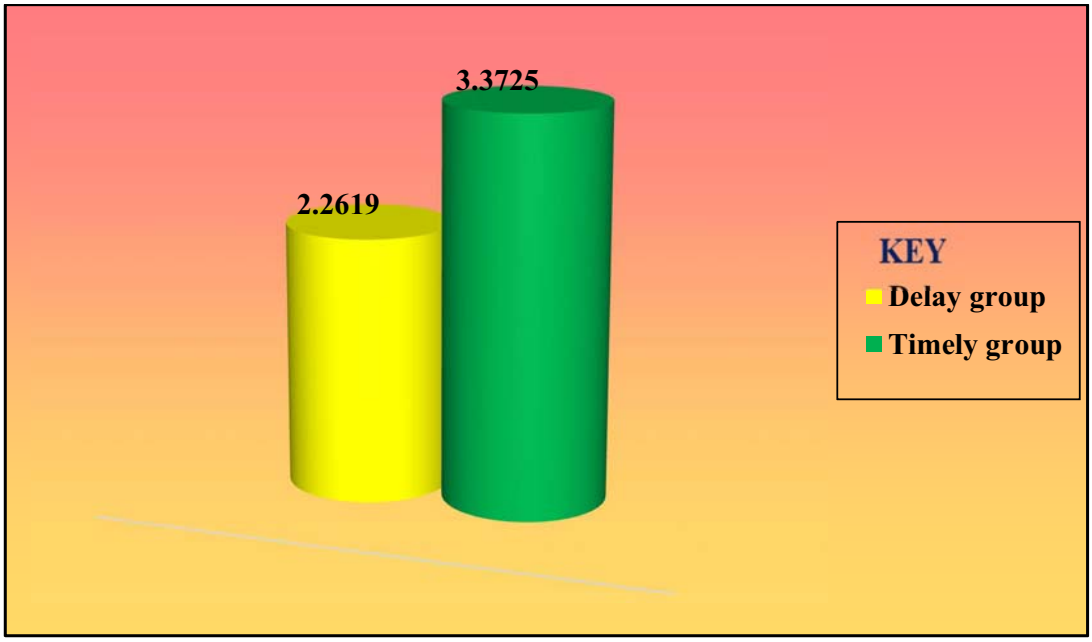

Figure 20: Comparison of mean pain scores of subjects who sought delayed treatment and timely treatment.

TABLE-09: Comparison of knowledge scores of between subjects who sought delayed and timely treatment respectively.

SL. No.	Knowledge Scores	N	Mean	S.D	Sig. Value
1	>120 Minutes (Delay Group)	42	5.7381	5.78079	0.000*
2	<120 Minutes (Timely Group)	51	12.2745	5.79337	

Significance P<0.05

Table 09 shows the comparison of knowledge scores of subjects between subjects who sought delayed and timely treatment respectively. The mean knowledge score is more in subjects who sought timely treatment, thus low knowledge about AMI in the patients with AMI is one of the factor for delay in seeking treatment. The significant value (by using Mann-Whitney U test) 0.000 for knowledge scores, is significant at $p<0.05$. Thus there is significant difference between knowledge scores of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

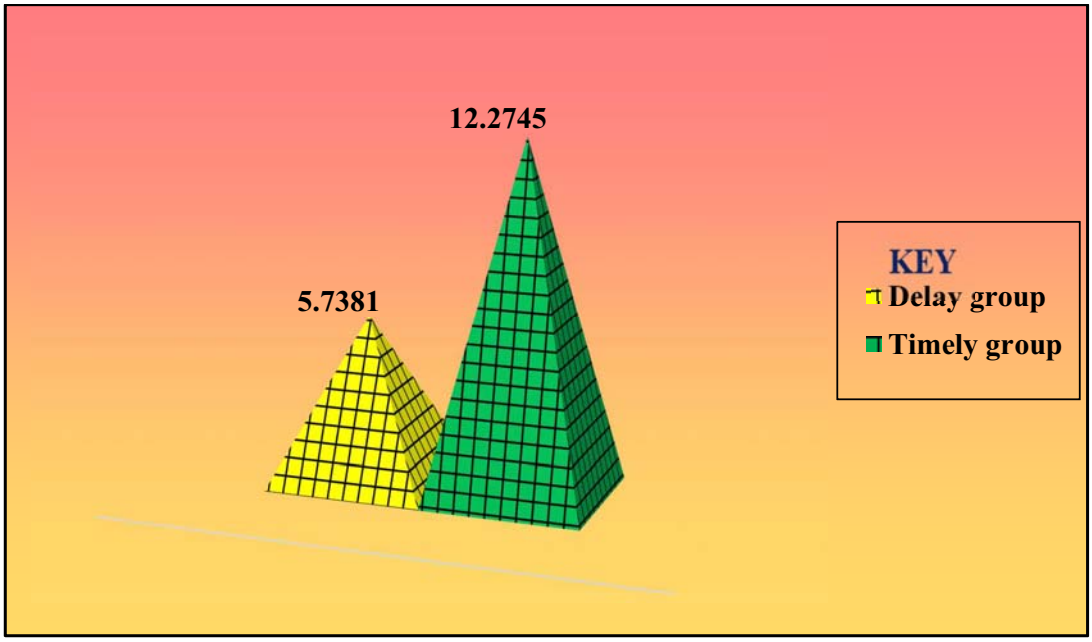

Figure 21: Comparison of mean knowledge scores between subjects who sought delayed treatment and timely treatment.

TABLE-10: Comparison of symptom perception of subjects

SL. No.	Symptom Perception	N	Mean	S.D	Sig. Value
1	>120 Minutes (Delay Group)	42	1.3095	.78050	0.000*
2	<120 Minutes (Timely Group)	51	3.6667	1.30639	

Significance P<0.05

Table 10 shows the comparison of symptom perception of subjects between delayed and timely treatment seeking groups respectively. The mean symptom perception was more in timely treatment seeking group (<120 minutes group), thus reduced symptom perception in the patients with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney U test) 0.000 for symptom perception, is significant at $p<0.05$. Thus there is significant difference between symptom perceptions of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

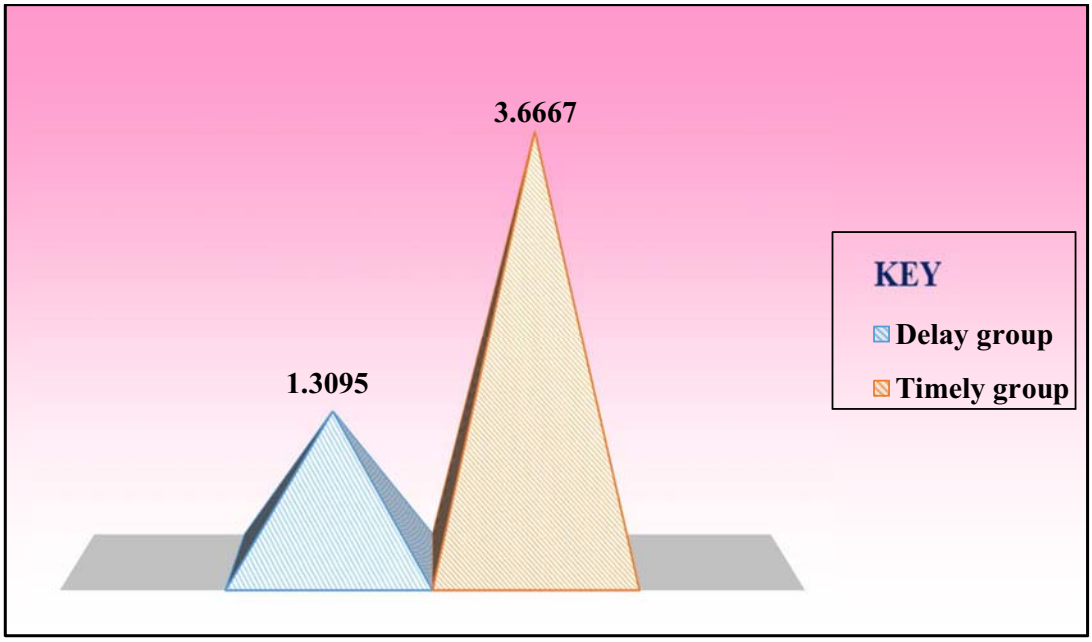

Figure 22: Comparison of mean symptom perception between delayed treatment and timely treatment group.

TABLE-11: Comparison of perceived seriousness of subjects between delayed and timely treatment seeking groups

SL. No.	Perceived Seriousness	N	Mean	S.D	Sig. Value
1	>120 Minutes (Delay Group)	42	1.8333	1.01011	0.000*
2	<120 Minutes (Timely Group)	51	4.7647	.65079	

Significance P<0.05

Table 11 shows the comparison of perceived seriousness of subjects between delayed and timely treatment seeking group respectively. The mean perceived seriousness was more in timely treatment seeking group, thus less perceived seriousness in the patients with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney U test) 0.000 for perceived seriousness, is significant at $p<0.05$. Thus there is significant difference between perceived seriousness of subjects between delayed and timely treatment seeking group respectively.

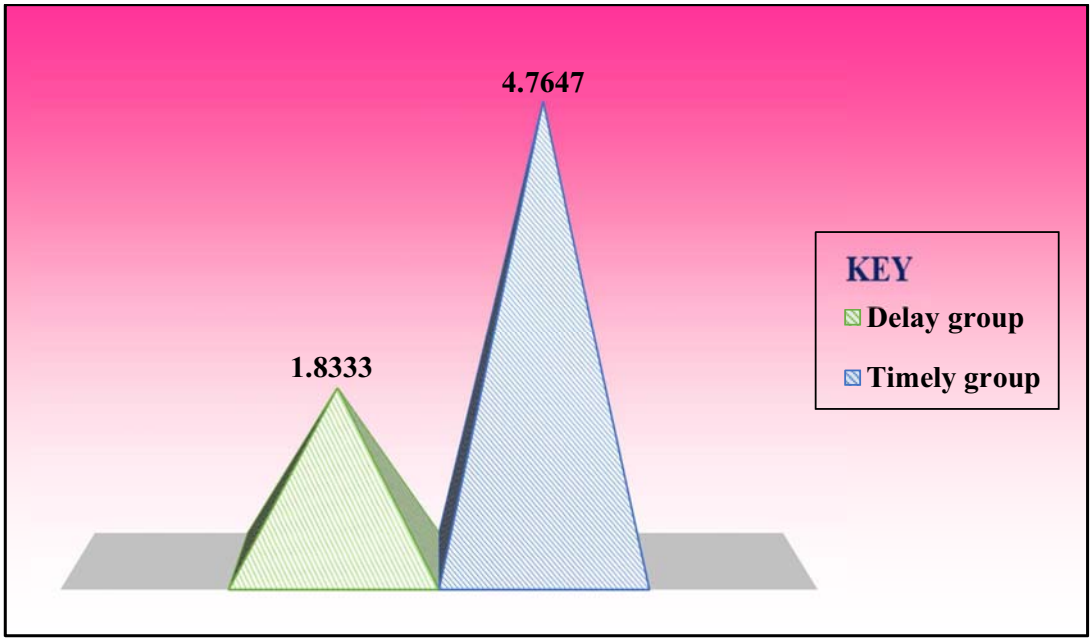

Figure 23: Comparison of mean perceived seriousness of subjects belonging to delayed and timely treatment group.

TABLE-12: Comparison of DUSOCS family support score of subjects between delayed and timely treatment seeking group respectively.

SL. No.	DUSOCS Family Support Score	N	Mean	S.D	Sig. Value
1	>120 Minutes (Delay Group)	42	42.6829	21.07625	0.000*
2	<120 Minutes (Timely Group)	51	57.4492	16.35976	

Significance P<0.05

Table 12 shows the comparison of DUSOCS family support score of subjects between delayed and timely treatment seeking group respectively. The mean family support score is more in timely treatment group, thus low family support in the patients with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney U test) 0.000 for family support, is significant at p<0.05. Thus there is significant difference between DUSOCS family support score of subjects between delayed and timely treatment seeking group respectively.

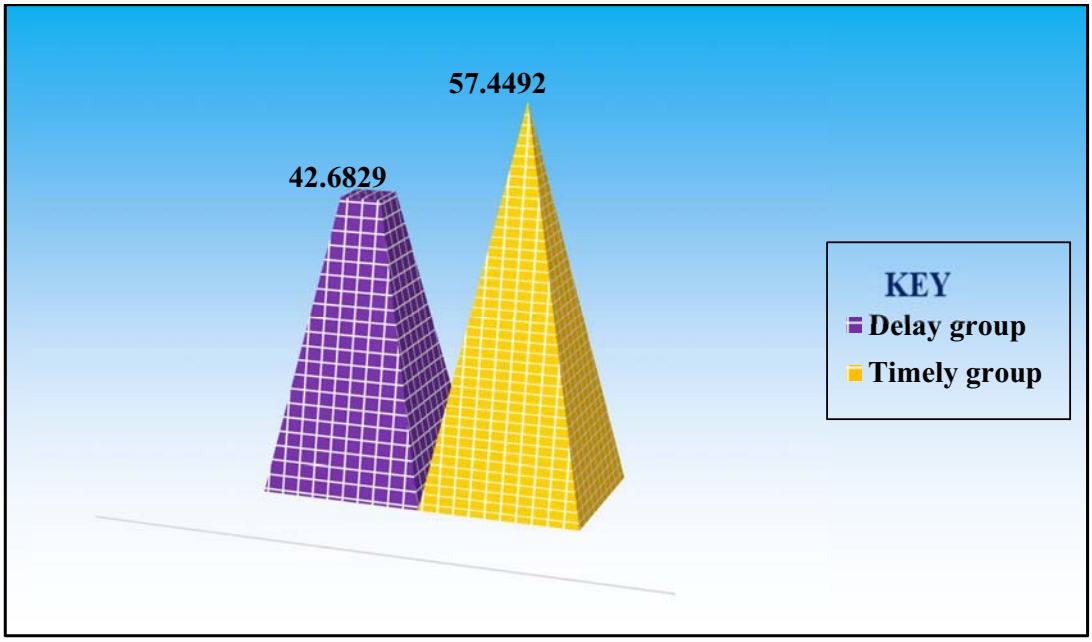

Figure 24: Comparison of mean DUSOCS family support score between subjects who sought delayed and timely treatment.

TABLE-13: Comparison of DUSOCS non-family support score of subjects between delayed and timely treatment seeking group respectively.

SL. No.	DUSOCS Non-Family Support Scores	N	Mean	S.D	Sig. Value
1	>120 Minutes (Delay Group)	42	4.7619	11.09561	0.000*
2	<120 Minutes (Timely Group)	51	24.9020	23.94766	

Significance P<0.05

Table 13 shows the comparison of DUSOCS non-family support score of subjects between delayed and timely treatment seeking group respectively. The mean non-family support score is more in timely treatment group, thus low non-family support in the patients with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney U test) 0.000 for non-family support, is significant at $p<0.05$. Thus there is significant difference between DUSOCS non-family support score of subjects between delayed and timely treatment seeking group respectively.

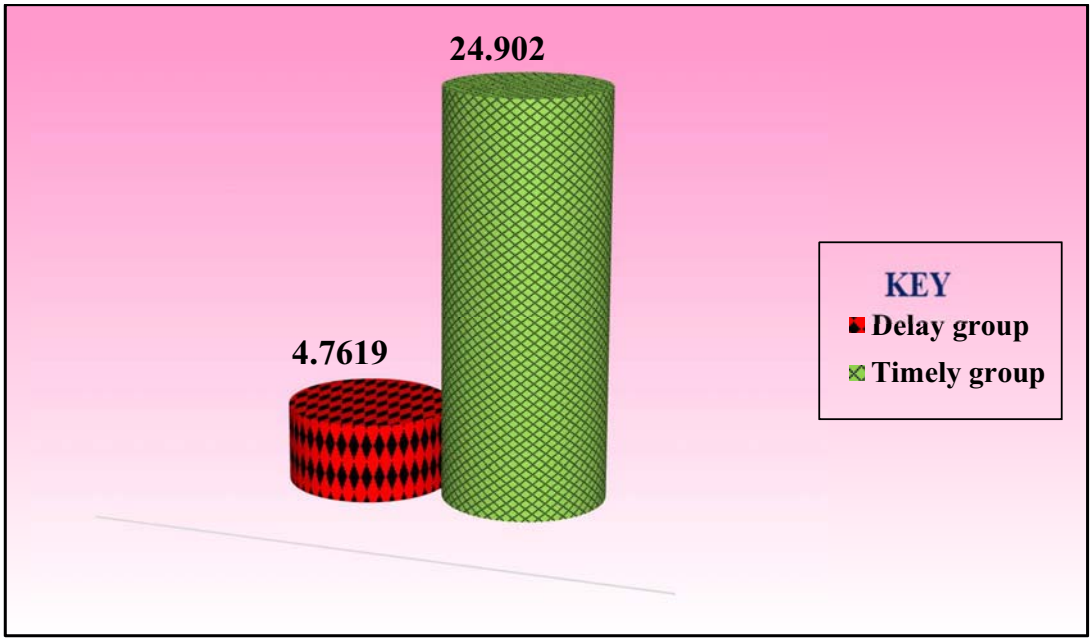

Figure 25: Comparison of mean DUSOCS non-family support score between subjects who sought delayed and timely treatment.

TABLE-14: Comparison of DUSOCS social support score of subjects between delayed and timely treatment seeking group respectively

SL. No.	DUSOCS Social Support Scores	N	Mean	S.D	Sig. Value
1	>120 Minutes (Delay Group)	42	29.2138	13.77236	0.000*
2	<120 Minutes (Timely Group)	51	48.3002	15.64416	

Significance P<0.05

Table 14 shows the comparison of DUSOCS social support score of subjects between delayed and timely treatment seeking group respectively. The mean social support score is more in timely treatment group, thus low social support in the patients with AMI is a factor for delay in seeking treatment. The significant value (by using Mann-Whitney U test) 0.000 for total social support, is significant at p<0.05. Thus there is significant difference between DUSOCS social support score of subjects between delayed and timely treatment seeking group respectively.

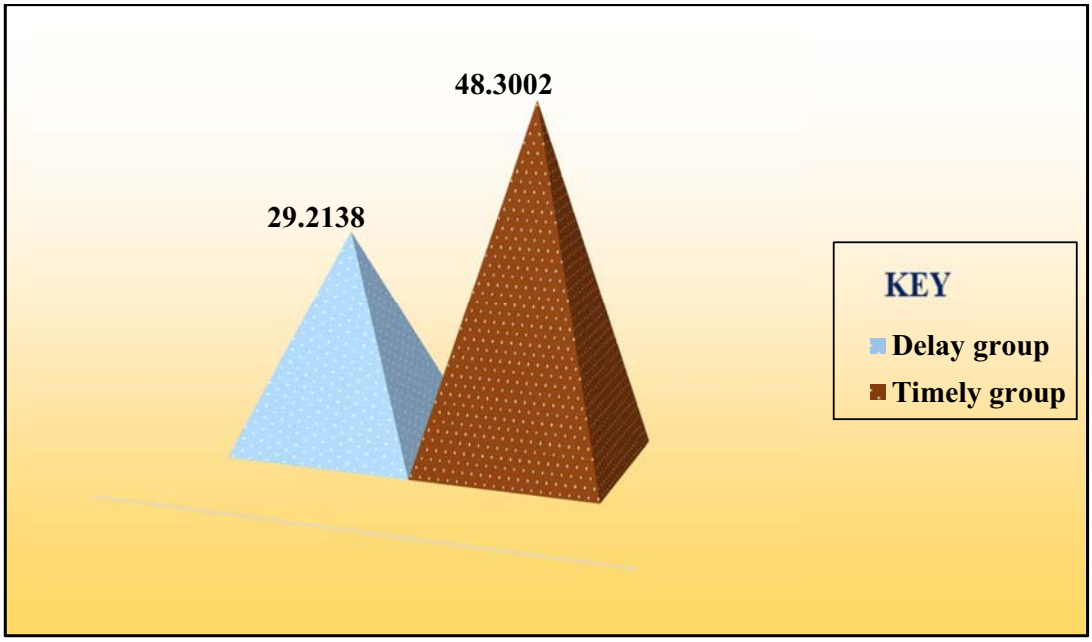

Figure 26: Comparison of mean DUSOCS social support score between delayed and timely treatment group.

CHAPTER-V

DISCUSSION, SUMMARY, CONCLUSION, IMPLICATIONS, LIMITATIONS AND RECOMMENDATION

This chapter deals with the discussion, summary and conclusion. It also clarifies the limitations of the study, implication and recommendations given for the different areas of nursing practice, nursing education, nursing administration and nursing research.

DISCUSSION

The present study was designed to explore the factors related to treatment seeking delay among adults diagnosed with acute myocardial infarction. The research design adopted for the study was retrospective design. Non-probability purposive sampling technique was used to include 93 AMI subjects for the study out of which 51 sought timely treatment and 42 sought delayed treatment. The data collected for the study were analyzed statistically using IBM SPSS statistics software version 20 and discussed based on the objectives.

Demographic variables of patients participated in the study

Out of 51 subjects in who sought timely treatment, age wise distribution shows 35 (69%) were above 50 years of age, gender wise distribution shows 49 (96%) were male and remaining were female, marital status depicts majority (96%) were married, educational background depicts 23 (45%) were illiterate whereas 12 (23%) were degree holders, occupational status shows majority (49%) were full time workers, monthly income shows 16 (31%) subjects were earning between Rs.21,000 to Rs.30,000 and type of family depicts 36 (71%) were belonging to nuclear family and rest were belonging to joint family.

Out of 42 subjects who sought delayed treatment, age wise distribution shows 27 (64%) were above 50 years of age, gender wise distribution shows 32 (76%) were male and remaining were female, marital status depicts majority 32 (95%) were married, educational background depicts majority 22 (52%) were illiterate whereas 5 (12%) were degree holders, occupational status shows majority (50%) were full time

workers, monthly income shows 17 (40%) subjects were earning between Rs.11,000 to Rs.20,000 and type of family depicts 27 (64%) were belonging to nuclear family and rest were belonging to joint family.

Clinical data of patients participated in the study

Out of 51 subjects who sought timely treatment 18 (35%) had no co-morbid illness, 31 (61%) had experienced one to two typical symptoms, 19 (37%) had experienced all the typical symptoms i.e. three and above, only 1 (2%) had experienced completely atypical symptoms like sweating along with fainting. Out of 42 subjects who sought delayed treatment 24 (57%) had no comorbid illness, 26 (62%) had experienced one to two typical symptoms, 16 (38%) had experienced three and above typical symptoms whereas none experienced completely atypical symptoms.

- **The first objective of the study was to assess the extent of delay for seeking treatment among adults diagnosed with acute myocardial infarction at KMCH, Coimbatore.**

According to time taken by the subjects from onset of symptoms to arrival at ER out of total 93 subjects, 55% sought treatment within 120 minutes from the onset of symptoms. Rest 45% took delayed treatment after 120 minutes form the onset of symptoms. From 51 subjects who sought timely treatment, 69% sought treatment within one hour from onset of symptoms. The delayed treatment seeking group depicts out of 42 subjects 50% sought treatment within 2-6 hours & 12% sought treatment after 24 hours out of which 5% of subjects sought treatment only after 48 hours.

A similar study done by Farshidi, et al. 2012, to find the factors causing pre hospital delay among AMI patients. They included 227 study samples and found that 35.7% of patients arrived within one hour of symptom onset and 7.9% arrived after 24 hours and remaining arrived between one and twenty four hours.

- **The second objective of the study explore the factors, contributing to treatment seeking delay among adults diagnosed with acute myocardial infarction at KMCH, Coimbatore.**

Pain score description between timely treatment seeking (N=51) and delayed treatment seeking group (N=42) shows that subjects who experienced severe pain level were 12% in timely treatment seeking group than 0% in delayed treatment seeking group. Subjects who experienced absolutely no pain were 8 (16%) in timely treatment seeking group whereas 10 (24 %) in delayed treatment seeking group. Out of this 18 subject who experienced zero pain 4 (3 form timely group and 1 from delayed group) had history of Diabetes Mellitus. Thus the subjects sought timely treatment if they experienced increased levels of chest pain. Hence it is supported that decreased pain level was one of the factors contributing to treatment seeking delay.

Chest pain description between timely treatment seeking (N=51) and delayed treatment seeking group (N=42) shows that subjects who experienced chest pain with other symptoms were higher in timely treatment seeking group (82%) than in delayed treatment seeking group (74%) respectively. The number of subjects where less with pain other than chest region and only chest pain in timely group than delayed group. Thus the subjects sought timely treatment if they experienced chest pain with other symptoms. Hence it is suggests that presence of pain other than chest region and only chest pain were also the factors contributing to treatment seeking delay.

Vidotto, et al., (2013) conducted a study on Cognitive and Emotional Factors Affecting Decision Making Delay among adult males with Acute Myocardial Infarction. The study was conducted in 118 Coronary Care Units at Italy. 929 AMI patients presented to the CCU in a conscious condition less than two hours, 2-6 hours, 6-12 hours, and more than 12 hours after symptom onset were added to the multicenter case-control study. This study concluded that somatic awareness is the main dimension affecting perceived threat, but subjective pain intensity was also inversely proportional to treatment seeking time.

Distribution according to knowledge scores between group of subjects who sought timely treatment (N=51) and those who sought delayed treatment (N=42) shows that there is a huge difference between subjects of timely group and delayed group with poor knowledge 10% and 55% respectively and with very good knowledge 33% and 12% respectively. This explains lack of knowledge contributes in delaying the time for treatment seeking. This indicates that decreased knowledge about AMI was one of the factors contributing to treatment seeking delay.

Hwang, et al., (2012) did a study on cognitive factors influencing delay in decisions to seek treatment among patients with AMI. The sample included 94 male and 71 female patients who were hospitalized for AMI. The median pre-hospital delay was 12 hours. The study found that low education level is one of the factors for delayed decisions.

Distribution according to symptom perception between group of subjects who sought timely treatment (N=51) and those who sought delayed treatment (N=42) shows that number of subjects who had perceived their symptoms extremely similar were higher (30%) in timely treatment seeking group than in delayed treatment seeking group (2%). In contrast the subjects who not at all had similar symptom perception were higher in delayed group than in timely treatment seeking group (79% and 12%) respectively. Thus the subjects sought timely treatment if they had increased perception of symptoms corresponding to AMI. Hence it is inferred that decreased symptom perception corresponding to AMI was one of the factors contributing to treatment seeking delay.

The above finding was supported by a study conducted by Jackson et al., (2014) on symptom perception and decision making among older women. This study included 33 subjects who were more than 65 years of age. This study showed that subjects had difficulty in identifying symptoms of heart attack when they do not had previous exposure. Thus incorrect symptom perception often was the reason for delayed treatment seeking among these subjects.

Distribution according to perceived seriousness between group of subjects who sought timely treatment (N=51) and those who sought delayed treatment (N=42) shows that there exist a huge difference among subjects who not at all perceived seriously the situation between timely treatment seeking (2%) and delayed treatment seeking group (50%). In contrast subjects who had perceived extremely serious were highest (82%) in timely treatment seeking group than in delayed treatment seeking group (2%). Thus the subjects sought timely treatment if they had perceived seriously. This suggests that reduced seriousness is one of the factors contributing to treatment seeking delay.

A study conducted by Momeni, et al., (2012) in Iran to find the factors influencing pre-hospital delay among patients with AMI. They conducted a study on 162 patients with STEMI. Their findings showed that admission in weekend, false interpretation of symptoms and not so serious about the condition were the factors influenced pre-hospital delay.

Distribution according to DUSOCS family support scores between group of subjects who sought timely treatment (N=51) and those who sought delayed treatment (N=42) shows that number of subjects who received adequate family support were more in timely treatment seeking group (59%) as compared to delayed treatment seeking group (33%) respectively. The number of subjects who received inadequate family support were more in delayed treatment seeking group (67%) than timely treatment seeking group (41%). This explains family support received by subjects' influences treatment seeking time. Thus the subjects sought delayed treatment when they received inadequate family support and was one the factor for treatment seeking delay.

Distribution according to DUSOCS non-family support scores between group of subjects who sought timely treatment (N=51) and those who sought delayed treatment (N=42) shows that number of subjects who received adequate non-family support were highest (20%) in timely than in delayed (0%) treatment seeking group. The subjects who not at all received non-family support were 37% and 76% in timely and delayed treatment seeking group respectively. Thus the subjects tends to seek delayed treatment if they had not received any non-family support. Also this explains that how careless the society became in terms of helping others who are at need in

absence of their family members. This indicates that no support from non-family personnel was one of the factors contributing to treatment seeking delay.

Distribution according to DUSOCS social support scores between group of subjects who sought timely treatment (N=51) and those who sought delayed treatment (N=42) shows that number of subjects who received adequate social support were higher in timely treatment seeking group (45%) as compared to delayed treatment seeking group (7%) respectively. The number of subjects who received inadequate social support were high in delayed treatment seeking group (93%) than timely treatment seeking group (55%). Thus the subjects sought delayed treatment as they received inadequate social support. Hence inadequate social support was one of the factors contributing to treatment seeking delay.

Result was supported by the study done by Tanner, (2012) who examined the relationship of factors that influence pre-hospital delay in seeking treatment among adults with AMI. A descriptive, cross-sectional, comparative study design with a correlational component was used. Data were collected from 82 hospitalized older adults between 60-80 years of age. Findings showed that subjects who received personal support tend to seek treatment early as compared to those who had not received. ($P < 0.05$).

- **The third objective of the study was to compare factors contributing to treatment seeking delay among patients who sought timely treatment and those who sought delayed treatment.**

The comparison of mean pain score between subjects who sought delayed treatment and timely treatment showed that the mean pain score of subjects who sought delayed treatment (2.2619) is less than those who sought timely treatment (3.3725). Thus reduced pain level in the subjects with AMI was one of the factor contributed for delay in seeking treatment. The computed significant value (by using Mann-Whitney U test) 0.037, is significant at $p<0.05$. Thus there is a significant difference between pain scores of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

The comparison of knowledge scores of subjects between subjects who sought delayed and timely treatment showed that the mean knowledge score is more in subjects who sought timely treatment (12.2745) than those who sought delayed treatment (5.7381). Thus low knowledge about AMI also contributed for delayed treatment seeking. The computed significant value (by using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference between knowledge scores of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

The comparison of symptom perception of subjects between delayed and timely treatment seeking groups showed that the mean symptom perception was more in timely treatment seeking group (3.6667) than in delayed treatment seeking group (1.3095). Thus reduced symptom perception in the patients with AMI was also one of the factor for delay in seeking treatment. The computed significant value (by using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference between symptom perceptions of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

The comparison of perceived seriousness of subjects between delayed and timely treatment seeking group showed that the mean perceived seriousness was more in timely treatment seeking group (4.7647) than in delayed treatment seeking group (1.8333). Thus decreased seriousness in the patients with AMI was a contributing factor for delayed treatment. The computed significant value (by using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference between perceived seriousness of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

The comparison of DUSOCS family support score of subjects between delayed and timely treatment seeking group respectively showed that the mean family support score is more in timely treatment group (57.4492) than in delayed treatment seeking group (42.6829). Thus reduced family support in the patients with AMI also contributed for delay in seeking treatment. The computed significant value (by using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference

between DUSOCS family support score of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

The comparison of DUSOCS non-family support score of subjects between delayed and timely treatment seeking group respectively showed that the mean non-family support score is more in timely treatment group (24.902) than in delayed treatment seeking group (4.7619). Thus reduced non-family support in the patients with AMI was one of the factors for delay in seeking treatment. The computed significant value (by using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference between DUSOCS non-family support score of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

The comparison of DUSOCS social support score of subjects between delayed and timely treatment seeking group respectively showed that the mean social support score is more in timely treatment group (48.3002) than in delayed treatment seeking group (29.2138). Thus reduced social support in the patients with AMI was one of the factors for delay in seeking treatment. The computed significant value (by using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference between DUSOCS social support score of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

SUMMARY

The purpose of the study was to assess the extent of delay for seeking treatment, explore the factors related to treatment seeking delay among adults diagnosed with acute myocardial infarction and compare the factors at KMCH, Coimbatore.

The objectives of this study were to:

- assess the extent of delay for seeking treatment.
- explore the factors, contributing to treatment seeking delay.
- compare factors contributing to treatment seeking delay among patients who had timely treatment and those who had delay in treatment seeking.

Prof. Kaoru Ishikawa's (1990), the cause and effect analysis was modified and used to relate the concept of present study. Retrospective design was used for this study. The sample size comprised of 100 hospitalized adults with a confirmed diagnosis of AMI through emergency department at KMCH Coimbatore. Non-probability purposive sampling technique was used to select the samples.

The tool was developed for the purpose of obtaining data for the study.

PART I : Deals with demographic data such as age, gender, marital status, education, type of family, occupation, monthly income were included.

PART II : ACS clinical data extraction form contains clinical factors such as history of AMI, presenting symptoms (typical and atypical- not accompanied by chest pain) of AMI, self-reported pain level on arrival, history of co-morbid illness are included.

PART III : Cognitive factors assessment questionnaire. It consists of three parts. Knowledge regarding AMI, symptom perception, perceived level of seriousness.

PART IV : Duke Social support scale.

MAJOR FINDINGS:

- The minimum and maximum time took by subjects to seek treatment was 10 and 5450 minutes respectively.

- Average time took by subjects for seeking treatment was 410 minutes.

- Out of 93 study subjects who diagnosed as AMI, 18 (19%) subjects had absolutely no pain.

- Out of 93 study subjects 51 (55%) not at all received non-family support. this depicts the attitude of the society and should be looked upon by the policy makers.

- The mean pain score of subjects who sought delayed treatment (2.2619) is less than those who sought timely treatment (3.3725). The computed significant value (by using Mann-Whitney U test) 0.037, is significant at $p<0.05$. Thus there is a significant difference between pain scores of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

- The mean knowledge score is more in subjects who sought timely treatment (12.2745) than those who sought delayed treatment (5.7381). The computed significant value (by using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference between knowledge scores of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

- The mean symptom perception was more in timely treatment seeking group (3.6667) than in delayed treatment seeking group (1.3095). The computed significant value (by using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference between symptom perceptions of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

- The mean perceived seriousness was more in timely treatment seeking group (4.7647) than in delayed treatment seeking group (1.8333). The computed significant value (by using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference between perceived seriousness of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

- The mean family support score is more in timely treatment group (57.4492) than in delayed treatment seeking group (42.6829). The computed significant value (by using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference between DUSOCS family support score of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

- The mean non-family support score is more in timely treatment group (24.902) than in delayed treatment seeking group (4.7619). The computed significant value (by

using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference between DUSOCS non-family support score of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

- The mean social support score is more in timely treatment group (48.3002) than in delayed treatment seeking group (29.2138). The computed significant value (by using Mann-Whitney U test) 0.000, is significant at $p<0.05$. Thus there is significant difference between DUSOCS social support score of subjects who sought timely treatment (less than 120 minutes) and delayed treatment (more than 120 minutes).

CONCLUSION

The following conclusions are drawn from the study

- This study concludes that the decreased pain level, absence of chest pain and presence of chest pain alone were the factors related to treatment seeking delay among patients with AMI.
- This study draws a conclusion that the less knowledge about AMI, reduced symptom perception and perceived seriousness (cognitive factors) respectively were also the factors related to treatment seeking delay among patients with AMI.
- This study showed that the inadequate family support, non-family support and social support were also the factors related to treatment seeking delay among patients with AMI.

IMPLICATIONS

The delay in seeking treatment is mainly due to reduced pain level, decreased knowledge level about AMI, reduced symptom perception and reduced perceived seriousness by the patients, inadequate family, non-family and social support received by the patients with AMI respectively. Improving knowledge about AMI, symptom perception and seriousness in perception regarding the situation respectively is an essential component for decreasing the treatment seeking delay among patients with AMI. The study on factors related to treatment seeking delay have the following implications in various aspects of nursing education, practice & administration.

Nursing education

- As AMI is one of the major and important medical emergency condition, nursing students could be educated about AMI and trained to care the patients with AMI.
- Nurses should be trained to give Basic Life Support to persons who are at need outside the health care facility.
- In-service education and training should be arranged for nurses regarding AMI and skills required for providing emergency care, long term care, and home care.

Nursing practice

- Nurses should teach the patients more about early symptom perception of both typical as well as atypical symptoms of AMI for early recognition.
- Nurses should emphasize education to general public as well.
- Nurses working in critical as well as non-critical areas should be trained for providing Advanced Cardiac Life Support.
- This study creates awareness among nurses regarding factors related to treatment seeking delay among adults with AMI.

Nursing administration

- Nurse administrators can motivate the nurses to carry out educational programs for patients and their relatives coming to health care facility especially for high risk group.
- Nurse administrators can motivate the nurses to carry out special camps in the community for raising awareness about steps to be carried out during the time of experiencing symptoms of AMI.
- Nurse administrator can monitor and supervise the nurses to update their knowledge and skills in order to give effective care at times of emergency.

LIMITATIONS OF STUDY

- The study did not cover the adults who never sought treatment for their AMI symptoms or who did not survive their AMI.
- The retrospective design used may have recall bias that would have influenced the accuracy of the participants' AMI experience.
- The study conducted only in a particular setting.
- The number of samples was less as compared to the research population.

RECOMMENDATIONS

- Similar studies can be done in conducted in a large group.
- Association between demographic variables and extent of time delay can be done.
- Correlation between demographic variables and factors causing delay can be found.
- More factors causing delay in treatment seeking can be explored.
- Future research focusing on improving the knowledge about AMI could be carried out.

ABSTRACT

Study entitled "A Study to Explore the Factors Related to Treatment Seeking Delay Among Adults Diagnosed with Acute Myocardial Infarction at KMCH, Coimbatore". **Objective:** The main aim of the study was to explore the factors causing delay in seeking treatment among adult patients diagnosed with AMI and compare the factors between timely and late treatment seeking groups. **Design:** Retrospective design. **Setting:** Kovai Medical Center and Hospital, Coimbatore. **Sample size:** 93 hospitalized adults with a confirmed diagnosis of AMI admitted through emergency department. **Conceptual Framework:** Modified Kaoru Ishikawa's the cause and effect analysis model (1990). **Data Collection procedure:** After obtaining ethical clearance from concerned authorities, verbal consent from the participants' demographic variables, clinical profile was collected. Clinical, Cognitive, Social Support factors were obtained by use of interview questionnaires & DUSOCS social support scale. **Results:** The mean pain score, knowledge scores, symptom perception, perceived seriousness, DUSOCS family support score, DUSOCS non-family support score and DUSOCS social support score respectively were more in timely treatment seeking group (less than 120 minutes) as compared to delayed treatment seeking group (more than 120 minutes). The 'Significant' value computed for pain score, knowledge scores, symptom perception, perceived seriousness, family support, non-family support and social support respectively were found to be significant at $p<0.05$. **Conclusion:** Decreased pain score, decreased knowledge about AMI, decreased symptom perception, decreased perceived seriousness, inadequate family support, non-family support and social support respectively were the factors related to treatment seeking delay among adults diagnosed with AMI.

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APPENDIX-A

TOOLS

PART I

Demographic data:

1. Sample No: _____
2. Age:
    a. 20-30 years
    b. 31-40 years
    c. 41-50 years
    d. >50 years
3. Gender:
    a. Male
    b. Female
4. Marital status:
    a. Married
    b. Un married
    c. Divorce
    d. Widow / widower
5. Education:
    a. Illiterate
    b. Primary education
    c. Higher Secondary education
    d. Degree
6. Occupation:
    a. Working Full Time,
    b. Working Part Time,
    c. Retired or unemployed
    d. Disabled, not able to work
7. Income:
    a. Less than Rs.10, 000
    b. Rs.11,000 to Rs.20,000
    c. Rs.21, 000 to Rs.30, 000
    d. Above Rs.30, 000

8. Type of Family:
    a. Nuclear
    b. Joint
    c. Extended

PART II:

ACS Clinical Data Extraction Form

1. History of co-morbid illness?

- Diabetes Mellitus □
- Hypertension □
- Nil □

2. Previous history Acute Myocardial Infarction? Yes □ No □
3. Self-reported pain level on arrival (using universal pain scale 0-10)

0	1	2	3	4	5	6	7	8	9	10
No										The worst
Pain/ Discomfort										it could be

4. MI location as identified on ECG:_____
5. Initial Cardiac Enzyme Level.

    Troponin T: _____

    CK-MB: _____

6. Time of onset of symptoms?

    Date_____ Time_____

    Day/month/year 12 hour clock

7. Time of arrival in the emergency department?

    Date_____ Time_____

    Day/month/year 12 hour clock

8. Symptoms experienced by patient:

    <u>Typical:</u> Pain / Discomfort.

	No	Yes
9.1 Center of chest.....	□ (0)	□ (1)
9.2 Left side of chest.....	□ (0)	□ (1)
9.3 Right side of chest.....	□ (0)	□ (1)
9.4 Left shoulder.....	□ (0)	□ (1)

9.5 Right shoulder.....	□ (0)	□ (1)
9.6 Left arm.….....	□ (0)	□ (1)
9.7 Left hand (including fingers).....	□ (0)	□ (1)
9.8 Right arm.....	□ (0)	□ (1)
9.9 Right hand (including fingers).....	□ (0)	□ (1)
9.10 Center of back (between shoulder blades).....	□ (0)	□ (1)
9.11 Lower back.....	□ (0)	□ (1)
9.12 Upper Abdomen.....	□ (0)	□ (1)
9.13 Lower Abdomen.....…...	□ (0)	□ (1)
9.14 Left leg/foot.....	□ (0)	□ (1)
9.15 Right leg/foot.....	□ (0)	□ (1)
9.16 Front of neck.....	□ (0)	□ (1)
9.17 Back of Neck….....	□ (0)	□ (1)
9.18 Throat.....	□ (0)	□ (1)
9.19 Jaw.....	□ (0)	□ (1)
9.20 Teeth.....	□ (0)	□ (1)
9.21 Cheeks….....	□ (0)	□ (1)
9.22 Ears.....	□ (0)	□ (1)
9.23 Shortness of breath	□ (0)	□ (1)

Atypical (not accompanied by chest pain):

	No	Yes
9.24 Belching	□ (0)	□ (1)
9.25 Nausea	□ (0)	□ (1)
9.26 Indigestion	□ (0)	□ (1)
9.27 Dizziness	□ (0)	□ (1)
9.28 Sweating	□ (0)	□ (1)
9.29 General weakness	□ (0)	□ (1)
9.30 Numbness or tingling in your hands	□ (0)	□ (1)
9.31 Numbness or tingling in your feet	□ (0)	□ (1)
9.32 Vomiting	□ (0)	□ (1)
9.33 Palpitations/funny beating of your heart	□ (0)	□ (1)
9.34 Fainting	□ (0)	□ (1)
9.35 Lightheaded	□ (0)	□ (1)

9.36 Leg cramps	□ (0)	□ (1)
9.37 Fear or fright	□ (0)	□ (1)
9.38 Fatigue/tiredness	□ (0)	□ (1)
9.39 Headache	□ (0)	□ (1)

PART III

Cognitive factors:

A) Knowledge about AMI:

1. Heart attack refers to _____

a. Injury or death of the heart muscle tissues □
b. Injury or death of the brain cells □
c. Injury or death of the kidney tissue □
d. Injury or death of the lung tissues □
e. Don't know □

2. Heart attack occurs due to _____

a. Decreased blood supply to heart □
b. Increased blood supply to heart □
c. Decreased blood supply to brain □
d. Increased blood supply to brain □
e. Don't know □

3. Risk factors of heart attack are_____.

a. Smoking □
b. Obesity □
c. Increased age □
d. Family history □
e. High blood pressure □
f. Don't know □

4. Typical symptoms of heart attack are_____.

a. Chest pain □
b. Jaw pain □
c. Cheek pain □

d. Neck pain □

e. Left or Right shoulder pain □

f. Don't know □

5. Sometimes heart attack occurs along with _____.

a. Nausea □

b. Numbness or tingling in hands □

c. Shortness of breath □

d. Palpitations □

e. sweating □

f. Don't know □

6. Chest pain is present in all patients experiencing heart attack.

a. Yes □

b. No □

c. Don't know □

7. One should seek medical attention immediately after onset of chest pain/discomfort.

a. Yes □

b. No □

c. Don't know □

8. Golden time for reducing damage to heart muscle and save life is _____

a. Less than one hour from onset of discomfort. □

b. Less than two hour from onset of discomfort. □

c. Less than three hour from onset of discomfort. □

d. Before six hours from onset of discomfort. □

e. Don't know □

B) Symptoms perception:

How similar were your symptoms with what you thought a heart attack would be like?

1	2	3	4	5
Not at all similar	mildly similar	moderately similar	very similar	extremely similar

C) Perceived Level of Seriousness:

When you first experienced your symptoms how *serious* did you think they were?

1	2	3	4	5
Not at all serious	mildly serious	moderately serious	very serious	extremely serious

PART IV

DUKE SOCIAL SUPPORT SCALE

People Who Give Personal Support: [A supportive person is one who is helpful, who will listen to you, or who will back you upwhen you are in trouble.]

INSTRUCTIONS: Please look at the following list and decide how much each person (or group of persons) is supportive for you at this time in your life. Check (√) your answer.

How supportive are these people now:	None	Some	A Lot	There is No Such Person
1. Your wife husband, or significant other person	____	____	____	_____
2. Your children or grandchildren	____	____	____	_____
3. Your parents or grandparents	____	____	____	_____
4. Your brothers or sisters	____	____	____	_____
5. Your other blood relatives	____	____	____	_____
6. Your relatives by marriage	____	____	____	_____
7. Your neighbors	____	____	____	_____
8. Your co-workers	____	____	____	_____
9. Your community members	____	____	____	_____
10. Your other friends	____	____	____	_____

11. Do you have one particular person whom you trust and to whom you can go with personal difficulties? Yes ____ No_____
12. If you answered "yes", which of the above types of person is he or she? (for example: child, parent, neighbor) _____.

gFjp I

kffs bjhifjut

1. khjphpvz :_____
2. taJ:
   m. 20–30 tUl'fs
   M. 31–40 tUl'fs
   ,. 41–50 tUl'fs
   <. 50 tUljjpwFnky
3. ghypdk
   m. M zghy
   M. bgzghy
4. jpUkzk rhhejrKjhaggoepiy
   m. jpUkzk Mdth
   M. jpUkzk Mfhjth
   ,. tpthfujJMdth
   <. tpjit/kidtpia ,Hejth
5. fytp
   m. vGjggoffj bjhpahjth
   M. Kjyepiyf fytp
   ,. nkyepiyffytp
   <. gllffytp
6. gzpKiw
   m. KGneuk ntiy
   M. gFjpneunt iy
   ,. Xat bgwwmyyJnt iyapyyh
   <. ntiybraaKoahJ/ CdKww
7. tUkhdk
   m. 10/000 +ghafFF iwthf
   M. +.11/000 Kjy +.20/000 tiu
   ,. +.21/000 Kjy +.30/000 tiu
   <. +.30/000 fFnky
8. FLkgtif
   m. jdpFfLkgk
   M. TlLFfLkgk
   ,. epiloffggll FLkgk

gFjp II

ACS kUjJt jut gphpjbjLjjy totk

1. ,iz Mnuhffpakwwneha tuyhW>

   - e‹hpHpt neha ☐
   - cah ,ujjmGjjk ☐
   - xdWnkapyiy ☐

2. Keija tuyhW j‹tpukhuilggh> Mk ☐ ,yiy ☐

3. typepiyiagwwpjhdhfnt jftymspjjy (cyfshtpa typmstpy 0-10 tiugadgLjjp)

   0 1 2 3 4 5 6 7 8 9 10

   ,yiy mJnkhrkhftk

   typ/nfhshW ,Uff Koak

4. khuilgg ,ljij ECG \ykfzlwpjy _____

5. Mukg ,jabehjpepiy

   lnuhnghdpd T:_____

   CK – MB: _____

6. mwpFwpfs bjhl'Fk fhyk>

   njjp:_____ neuk _____

   ehs/khjk/tUlk 12kzpneu fofhuk

7. mtrugphtpwF tUk neuk>

   njjp:_____ neuk _____

   ehs/khjk/tUlk 12kzpneu fofhuk

8. nehahspfs czhej mwpFwpfs

   tHffkhd: typ/nfhshWfs

		,yiy	Mk
9.1	khhgfjjpd ikajjpy	(O)☐	☐ (1)
9.2	khhgpd ,lggffjjpy	(O)☐	☐ (1)
9.3	khhgpd tyggffjjpy	(O)☐	☐ (1)
9.4	,lJnjhsglil	(O)☐	☐ (1)
9.5	tyJnjhsglil	(O)☐	☐ (1)
9.6	,lJ if	(O)☐	☐ (1)
9.7	,lJ if(tpuyfisaknrhjJ)	(O)☐	☐ (1)
9.8	tyJ if	(O)☐	☐ (1)
9.9	tyJ if(tpuyfisaknrhjJ)	(O)☐	☐ (1)
9.10	KJfpd ikajjpy	(O)☐	☐ (1)
9.11	KJfpd fHgFjp	(O)☐	☐ (1)
9.12	nky tapW	(O)☐	☐ (1)
9.13	fHtapW	(O)☐	☐ (1)
9.14	,lJfhy/ghjk	(O)☐	☐ (1)
9.15	tyJfhy/ghjk	(O)☐	☐ (1)
9.16	Kd fGjJ	(O)☐	☐ (1)
9.17	gpd fGjJ	(O)☐	☐ (1)
9.18	bjhzil	(O)☐	☐ (1)
9.19	jhil	(O)☐	☐ (1)
9.20	gwfs	(O)☐	☐ (1)
9.21	fdd'fs	(O)☐	☐ (1)
9.22	\rRjjpzwy	(O)☐	☐ (1)

,aygww

9.23	Vggk	(O)☐	☐ (1)
9.24	Fkl l y	(O)☐	☐ (1)
9.25	m$uz k	(O)☐	☐ (1)
9.26	j i yrRwwy	(O)☐	☐ (1)
9.27	tpahi t	(O)☐	☐ (1)
9.28	bghJthd thypdk	(O)☐	☐ (1)
9.29	c'fs ifapy czhrpapdik myYj Trrczht	(O)☐	☐ (1)
9.30	c'fs fhypy czhrrpapdik myyJ Trrczht	(O)☐	☐ (1)
9.31	thejp	(O)☐	☐ (1)
9.32	glglgg / ,jaJoggpd epiy ntofifahjy	(O)☐	☐ (1)
9.33	kaffk	(O)☐	☐ (1)
9.34	j i yRwwy	(O)☐	☐ (1)
9.35	fhypy j irggpogg	(O)☐	☐ (1)
9.36	gakmyyJmrrk	(O)☐	☐ (1)
9.37	nrhht	(O)☐	☐ (1)
9.38	j i yty p	(O)☐	☐ (1)

gFjp III

mwpthwwy fhuzp

A. jPtpukhuilgg gwwpa mwpt:

1. khuilgg Fwpffpwj _____

m. ,jajirjpRffspd fhak myyJkuzk

M. \isbryfspy fhak myyJkuzk

,. rpWeuf jpRfhak myyJkuzk

<. Eiuapuy jpRfspd fhak myyJkuzk

c. bjhpahJ

2. khuigg _____ fhuzkhf VwgLfpwJ.

m. ,jajjpwF ,ujjtH'fy Fiwjy

M. ,jajjpwF ,ujjtH'fy mjpfkhjy

,. \isfF ,ujjtH'fy Fiwjy

<. \isfF ,ujjtH'fy mjpfkhjy

c. bjhpahJ

3. khuilgg mghajjpwfhd fhuzpfs _____

m. gifgpojjy

M. clygUkd

,. mjpfhpjj taJ

<. FLkg tuyhW

c. cah ,ujj mGjjk

C. bjhpahJ

4. khu i lggpwfhd bghJ thd mwpFwpf s

m. be"R t ypy

M. jh i l t ypy

,. f d d j jpy t ypy

<. fGj J t ypy

c. , lJ myyJ t yJ njhsgl i l t ypy

C. bjhpahJ

5. rpyneu' f spy be"R t ypy_____ c l d , i z eJ VwgLfpwJ

m. Fk l l y

M. c zhtpd i k myyJ i fapy Trrk

,. \rRjpz wy

<. glglgg

c. tpah i t

C. bjhpahJ

6. be"R t ypy c s s m i d jJ nehahspf Sk khu i lgghy ghjpf fggL thhf s

m. Mk

M. , y i y

,. bjhpahJ

7. xU t UfF be"R t ypnah be"RnfhshWfnsh tejhy c l doahf kUj J t

Mnyhr i d bgwnt z Lk.

m. Mk

M., y i y

,. bjhpahJ

8. ,jaj irfsp y VwgLk ghjpggf i s F iwjJ c ap iufhgghww nt z oa bghwfhyk _____

m. nfhshWfs bjhl ' fpa xUk z p neuj jpwF s

M. nfhshWfs bjhl ' fpa ,u z Lk z p neuj jpwF s

,. nfhshWfs bjhl ' fpa \ dWk z p neuj jpwF s

<. nfhshWfs bjhl ' fpa MWk z p neuj jpwF s Kdghfnt

c. bjhpahJ

B. mwpFwpfs gwwpa c z ht

c ' f S fF Vwgl l c z ht/khu i lgg nghdw mwpFwpjhd vdWe+' f s vggo epi d jj+hfs>

1	2	3
mJnghdW ,yynt ,y i y	rwnw mJnghdW	VwfF iwa mJnghdW
4	5	
kpf t k mJnghdw	kpf t k mjpfkhd	

C. khu i lggpwfhd j+tpuj i j c z Uk epi y

K j d K jyp y khu i lggpwfhd j+tpuj i j e+' f s vggo c z hej+hfs>

1	2	3
,yynt ,y i y	rwnw	kpjkhd
4	5	
kpf t k	mjpfkhd	

gFj‰ IV

la{fr\f Mjut‰wfhd mst

r\fjj‰y jd‰ggl Mjut bfhLfFk kffs:

(Mjut jUk egh vdwhy/ c'fSfF cjt‰ahf ,UfFk xUth/ e‰'fs brhytijftd‰fFk xUth/ myyJ e‰'fs xU Jau jj‰y ,UfFk nghJ c'fSfF cjt‰ahf ,Uggth)

bray Kiwgnghjidfs: f‰Hfhqk gloaiyghhjJ mjjUzjj‰y c'fs thHfifa‰y c'fSfF Jizahf ,Uejegh (myyJ eghfs FG). c'fs‰d gj‰yfs ghhnghk (✓)

f‰Hfhqk eghfs

	c'fSfFvejmst‰wF cWJizahf ,Uejhhfs	,yiy	bfh"rk	k‰ftk	mijnghdw egh ahUk‰yiy
1.	c'fs kidt‰/fzth myyJ kww Fw‰gg‰ljjffegh				
2.	c'fs FHeijfs myyJ ngugg‰sisfs				
3.	c'fs bgwnwhhfs myyJ bgwnwhiu bgwwthfs				
4	c'fs rnfhjuhfs myyJ rnfhjh‰fs				
5	c'fs kww ,ujj brhej'fs				
6	c'fs j‰Ukzk\yk Vwgll cwt‰dhfs (v.fh:khk‰ahh/ khkdhh/ Kddhs kidt‰/ Kddhs fzth)				

7	c ' f s mffkgffjjpy thHgthfs				
8	c ' f s c l d g z pghpg t h f s				
9	c ' f spd r \ f cWggpdhfs				
10	c ' f s kwwe z ghfs.				

11. c ' f spd j dpggl l f # l ' f i sggfpheJ Mk , y i y bfhs Skgoahdx Uekgpf i f c s s egh c s s huh> ☐ ☐

12. c ' f spd gjpy Mk vdwhy nky fh q k t i f f spy c s s j dpbahUegh ahh>

(v.fh. FHe i j/ bgwnwhh/ m f f k g f f k thHg t h) _____

APPENDIX-B

(Copy of Letter Seeking Assistance from Medical Expert)

KMCH COLLEGE OF NURSING

(Approved by the Government of Tamil Nadu & The Tamil Nadu Nurses & Midwives Council, Chennai
Recognized by the Indian Nursing Council, New Delhi and Affiliated to the Tamil Nadu Dr M G R Medical University, Chennai)
KMCH Campus, Avinashi Road, Coimbatore – 641 014. INDIA
Ph: (0422) 4323740, 2369321 Telefax : (0422) 2627525 Website: kmchcon ac.in E-mail: nursing@kmch.ac.in

Ref : KMCT/3569/ /07/15

31-07-2015

To

Dr. Suresh Kumar .R, M.D., D.M., (Cardio) (AIIMS)
Consultant & Interventional Cardiologist
Kovai Medical Center and Hospital
Coimbatore - 14

Dear Sir

Greetings to you .

I submit that one of our M.Sc(N) final year students by name Mr. V. Chandiran .K. Venkatesan specializing in Medical Surgical Nursing in our college desires to conduct a study titled **"A Study to Explore the Factors related to Treatment Seeking Delay among Adults diagnosed with Myocardial Infarction at KMCH, Coimbatore"** as part of his M.Sc(N) Curriculum. As he is in need of Medical Expert to complete the study, I request you to guide the student.

Thanking you

Yours Truly,

Prof. DR. S. Madhavi, M.Sc(N)., Ph.D.,
Principal

The Principal,
K.M.C.H. College of Nursing,
P.B. No : 3209, Avinashi Road,
Coimbatore - 641 014

KMCH COLLEGE OF NURSING COIMBATORE 641014

Accepted.

Dr.SURESHKUMAR.R M.D. D.M. (Cardiology (AIIMS)
(Ex Fellow, Korea University, Korea)
Consultant Interventional Cardiologist
Reg No. 65196
Kovai Medical Center & Hospital Ltd
Coimbatore 641 014 Tamil Nadu, INDIA

Administrative Office :
Kovai Medical Center Research and Educational Trust
No.940/1A&B, Kovai Estate, Kalapatti Road, Coimbatore - 641 048 INDIA
Ph : (0422) 2369321 E-mail : info@kmch ac in

APPENDIX-C

(Certificate of Content Validity)

CERTIFICATION OF CONTENT VALIDITY

This is to certify that, I have pursued the research proposal submitted by Mr. V. Chandiran. K. Venkatesan titled **"A Study to Explore the Factors Related to Treatment Seeking Delay Among Adults Diagnosed with Acute Myocardial Infarction at KMCH, Coimbatore".**

I found that the methodology and instruments are appropriate.

Place : Coimbatore

Date : 17-08-15

KMCH COLLEGE OF NURSING COIMBATORE-641014.

K. Balasubramanian

Signature & Seal

CERTIFICATION OF CONTENT VALIDITY

This is to certify that, I have pursued the research proposal submitted by Mr. V. Chandiran. K. Venkatesan titled **"A Study to Explore the Factors Related to Treatment Seeking Delay Among Adults Diagnosed with Acute Myocardial Infarction at KMCH, Coimbatore"**.

I found that the methodology and instruments are appropriate.

Place : Coimbatore

Date : 14.08.2015

KMCH COLLEGE OF NURSING COIMBATORE-641014

Signature & Seal

CERTIFICATION OF CONTENT VALIDITY

This is to certify that, I have pursued the research proposal submitted by V. Chandiran. K. Venkatesan titled **"A Study to Explore the Factors Related to Treatment Seeking Delay Among Adults Diagnosed with Acute Myocardial Infarction at KMCH, Coimbatore"**.

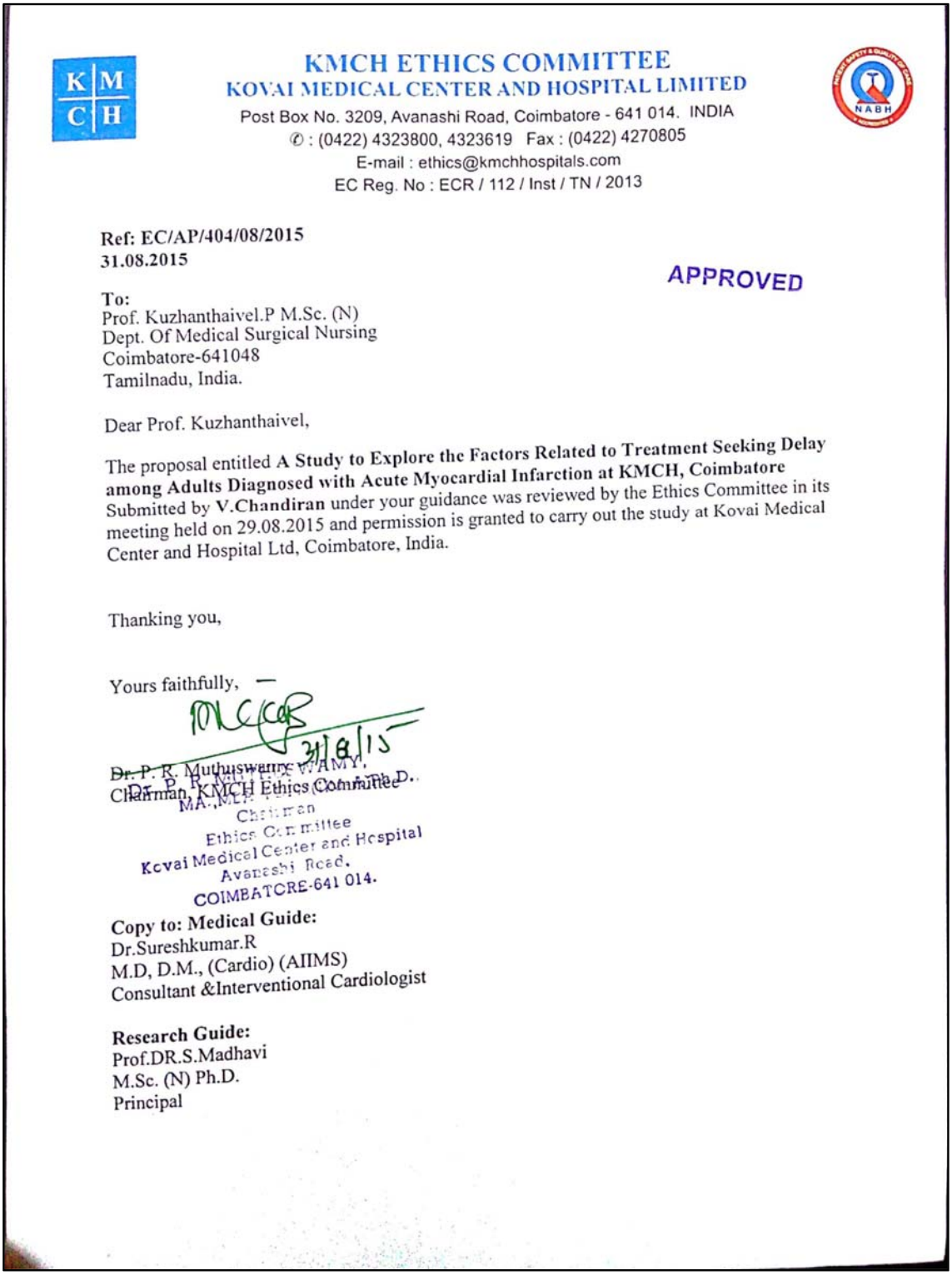
I found that the methodology and instruments are appropriate.

Place:Coimbatore

Date: 13.08.2015.

APPENDIX-D

(Letter issued by Ethical Committee)



KMCH ETHICS COMMITTEE
KOVAI MEDICAL CENTER AND HOSPITAL LIMITED
Post Box No. 3209, Avanashi Road, Coimbatore - 641 014. INDIA
✆ : (0422) 4323800, 4323619 Fax : (0422) 4270805
E-mail : ethics@kmchhospitals.com
EC Reg. No : ECR / 112 / Inst / TN / 2013

Ref: EC/AP/404/08/2015
31.08.2015

APPROVED

To:
Prof. Kuzhanthaivel.P M.Sc. (N)
Dept. Of Medical Surgical Nursing
Coimbatore-641048
Tamilnadu, India.

Dear Prof. Kuzhanthaivel,

The proposal entitled **A Study to Explore the Factors Related to Treatment Seeking Delay among Adults Diagnosed with Acute Myocardial Infarction at KMCH, Coimbatore** Submitted by **V.Chandiran** under your guidance was reviewed by the Ethics Committee in its meeting held on 29.08.2015 and permission is granted to carry out the study at Kovai Medical Center and Hospital Ltd, Coimbatore, India.

Thanking you,

Yours faithfully,

31/8/15

Dr. P. R. Muthuswamy, M.A., M.Ed., M.Phil., Ph.D.
Chairman, KMCH Ethics Committee

Dr. P. R. MUTHUSWAMY, M.A., M.Ed., M.Phil., Ph.D.
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Copy to: Medical Guide:
Dr.Sureshkumar.R
M.D, D.M., (Cardio) (AIIMS)
Consultant &Interventional Cardiologist

Research Guide:
Prof.DR.S.Madhavi
M.Sc. (N) Ph.D.
Principal

APPENDIX-E

LIST OF EXPERTS

1. **Dr. SureshKumar. R, M.D, D.M., (Cardio) (AIIMS)**
   Consultant & Interventional Cardiologist
   Kovai Medical Centre & Hospital Ltd. Coimbatore-14

2. **Prof. DR. S. Madhavi, M.Sc. (N), Ph.D.,**
   Principal,
   KMCH College of Nursing,
   Coimbatore – 641014

3. **Prof. DR. K. Balasubramanian, M.Sc. (N), Ph.D.,**
   Department of Medical and Surgical Nursing
   KMCH College of Nursing
   Coimbatore- 641014

4. **Prof. P. Kuzhanthaivel, M.Sc. (N),**
   Department of Medical and Surgical Nursing
   KMCH College of Nursing
   Coimbatore- 641014

5. **Prof. P. Viji, M.Sc. (N)**
   Department of Medical and Surgical Nursing
   KMCH College of Nursing
   Coimbatore- 641014